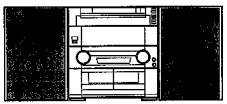
aiwa

aiwa SERVICE

Z-R997



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 2ZM-3MK2 YPR5NM
- BASIC CD MECHANISM : 6ZG-1 YS2DSHNM
- TYPE : LH

SERVICE MANUAL

SUPPLEMENT

SYSTEM	SPEAKER	CD – CASSEIVER	REMOTE CONTROLLER
Z – R997	SX – WZR99	CX – ZR997	RC – 7AS01

- This Service Manual contains information about the difference between Z-R997 (LH) and Z-R990 (LH). If requiring the other information, see Service Manual of Z-R990 (LH). (S/M Code No. 09-982-248-2FE). + 2827
- If requiring information about the CD mechanism, see Service Manual of 6ZG-1, S/M Code No. 09-984-249-9OT. V2J272

S/M Code No. 09–986–273–3FE

SPECIFICATIONS

<FM Tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

<AM Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output	170 W + 170 W (6 ohms, T.H.D. 10 %, 1 kHz)
Total harmonic distortion	0.15 % (85W, 1 kHz, 6 ohms)
Inputs	VIDEO/AUX: 210 mV (adjustable) PHONO: 340 mV (4 7kohms) MIC 1, MIC 2: 1.4 mV (20 kohms)
Outputs	CD DIGITAL OUT (OPTICAL) SUPER WOOFER: 3.2 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS: accept speakers of 8 ohms to 16 ohms or more PHONES (stereo jack): accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	CrO2 tape: 50 Hz – 16000Hz Normal tape: 50 Hz – 15000 Hz
Signal-to-noise ratio	60 dB (Dolby B NR ON,CrO2 tape peak level,above 400 Hz)
Recording system	AC bias
Heads	Deck 1 : Playback head x 1 Deck 2 : Recording/playback/ erase head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX–WZR99>

Cabinet type	4 way, bass reflex
Speakers	Super woofer: 240 mm cone type Woofer: 140 mm cone type Tweeter: 60 mm cone type Super tweeter : 20 mm ceramic type
Impedance	6 ohms
Output sound pressure level	89 dB/W/m
Dimensions (W x H x D)	300 x 500 x 385 mm
Weight	7.0 kg

<General>

Power requirements	120 V/ 220 – 230 V/ 240 V AC, switchable ,50 / 60 Hz
Power consumption	190 W
Dimensions of main unit (W x H x D)	360 x 394.5 x 382.5 mm
Weight of main unit	11.5 kg

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  "DOLBY" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories Licensing Corporation.
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  Under license from BBE Sound,Inc.

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-MA1-912-010		IB,LH(P) CCE 997

ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	88-MA1-601-010		C-IC,LC866560W-5G71
TRANSISTOR			
	87-A30-142-040		C-TR,DTA123EKA
MAIN C.B			
C114	87-010-385-080		CAP,ELECT 220-25V
C115	87-010-385-080		CAP,ELECT 220-25V
C204	87-016-299-080		CAP,E 10-100 SME
C209	87-010-400-080		CAP, ELECT 0.47-50V
C210	87-010-400-080		CAP, ELECT 0.47-50V
L832	86-005-847-080		COIL,2.2UH (CECS)
FRONT C.B			
C101	87-010-320-080		CAP, CHIP 68P
C102	87-010-320-080		CAP, CHIP 68P
C800	87-010-196-080		CHIP CAPACITOR,0.1-25
⚠ PR102	87-A90-246-080		PROTECTOR,0.25A 60V

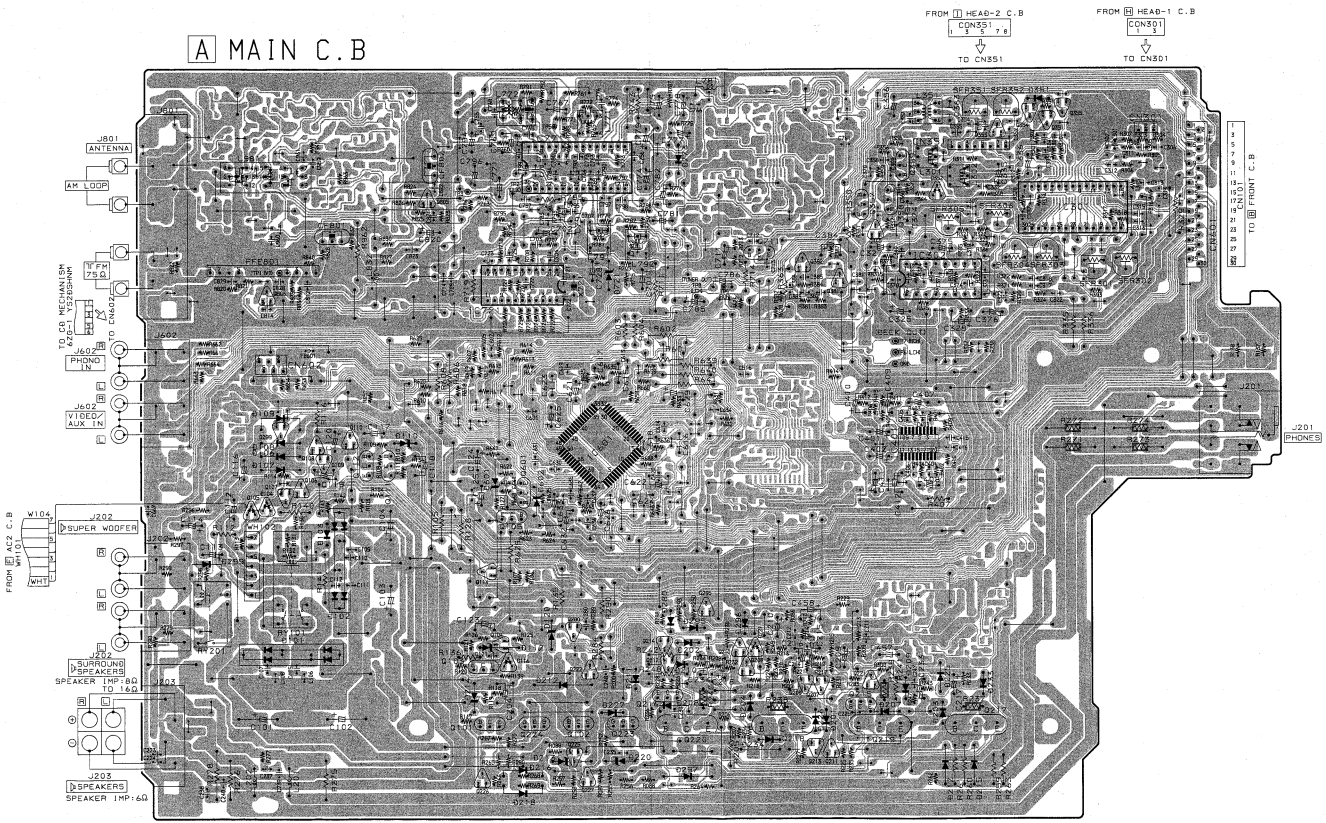
TRANSISTOR ILLUSTRATION

DTA123EKA

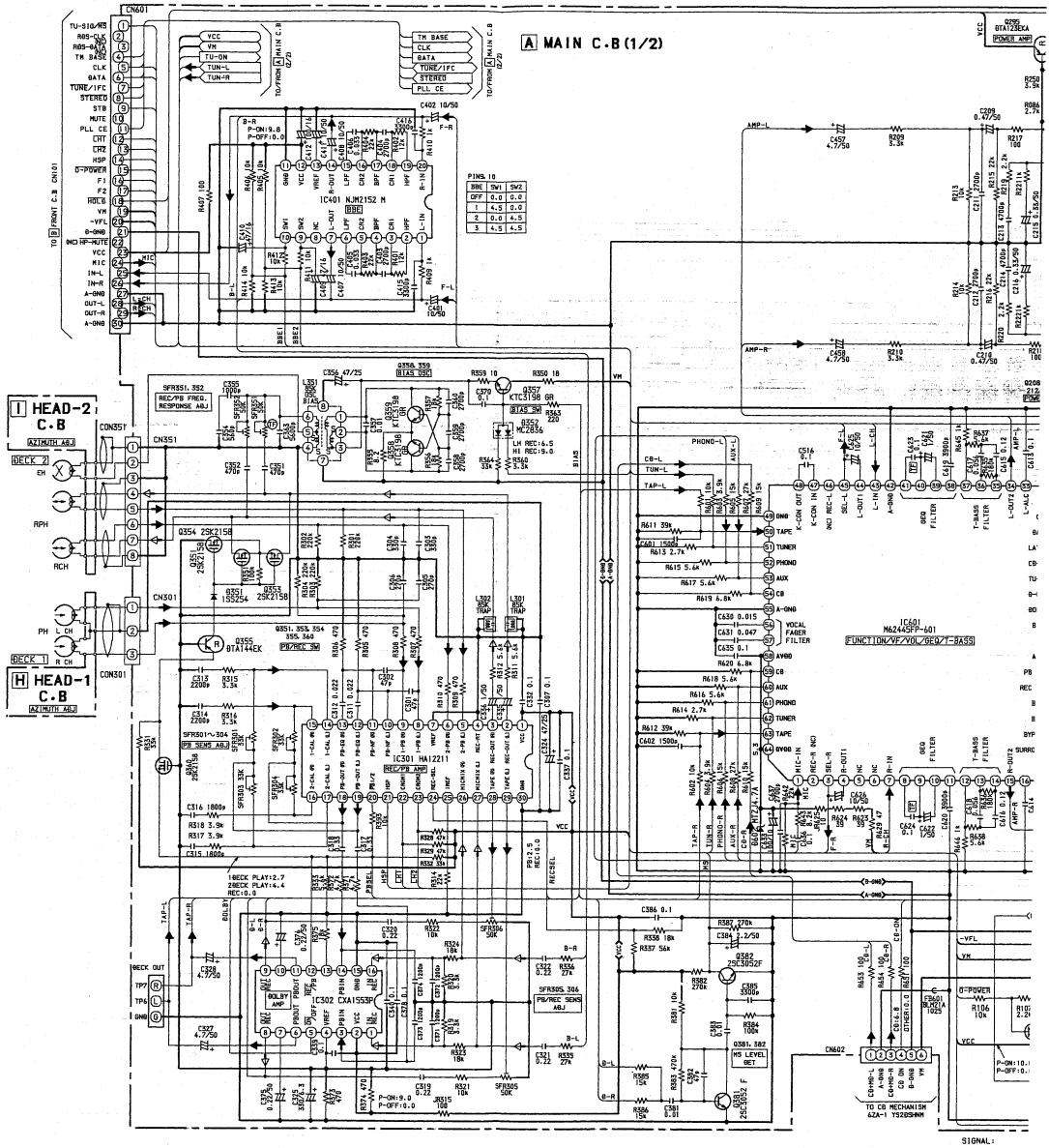
MECHANICAL PARTS LIST

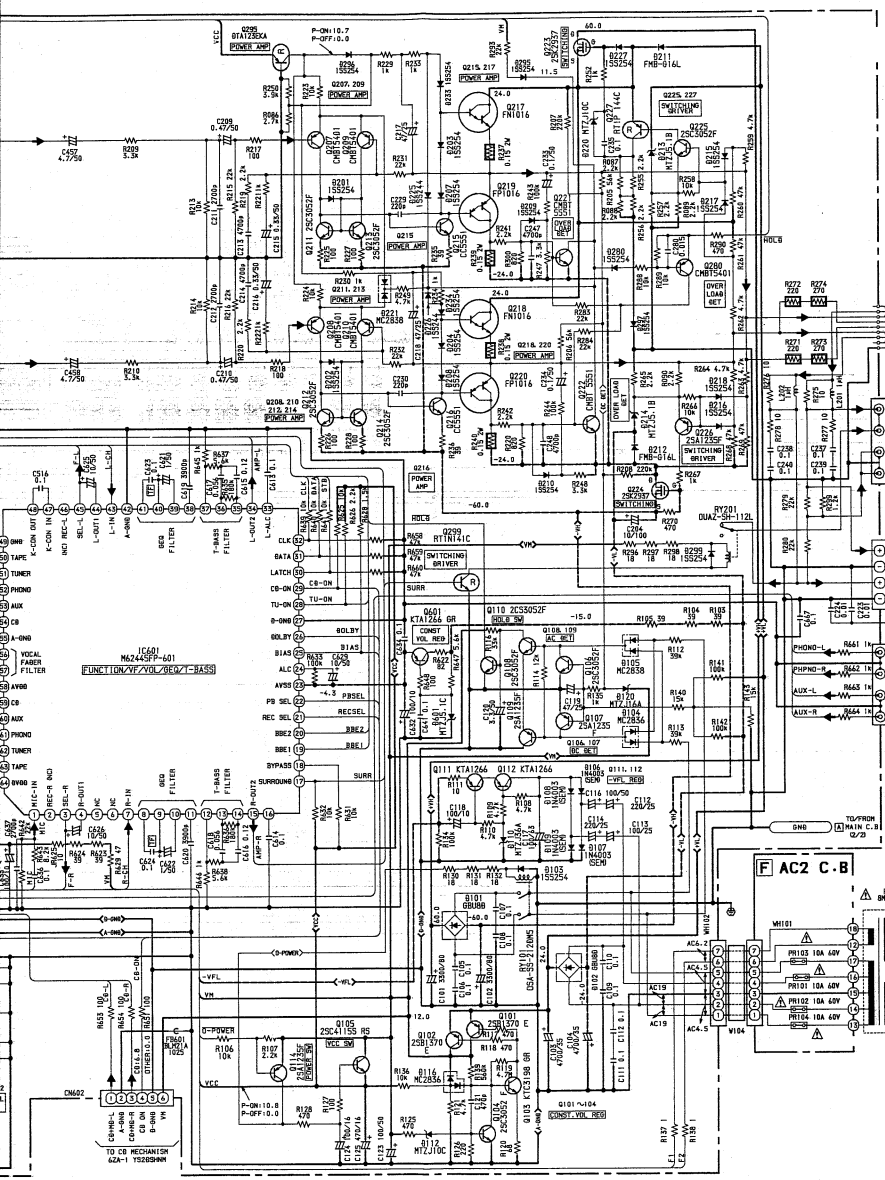
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
20	88-MA1-062-010		CABI,FR LH(997)
⚠ 45	87-050-079-010		AC-CORD ASSY,E
47	88-MA1-044-010		CABI,REAR LH

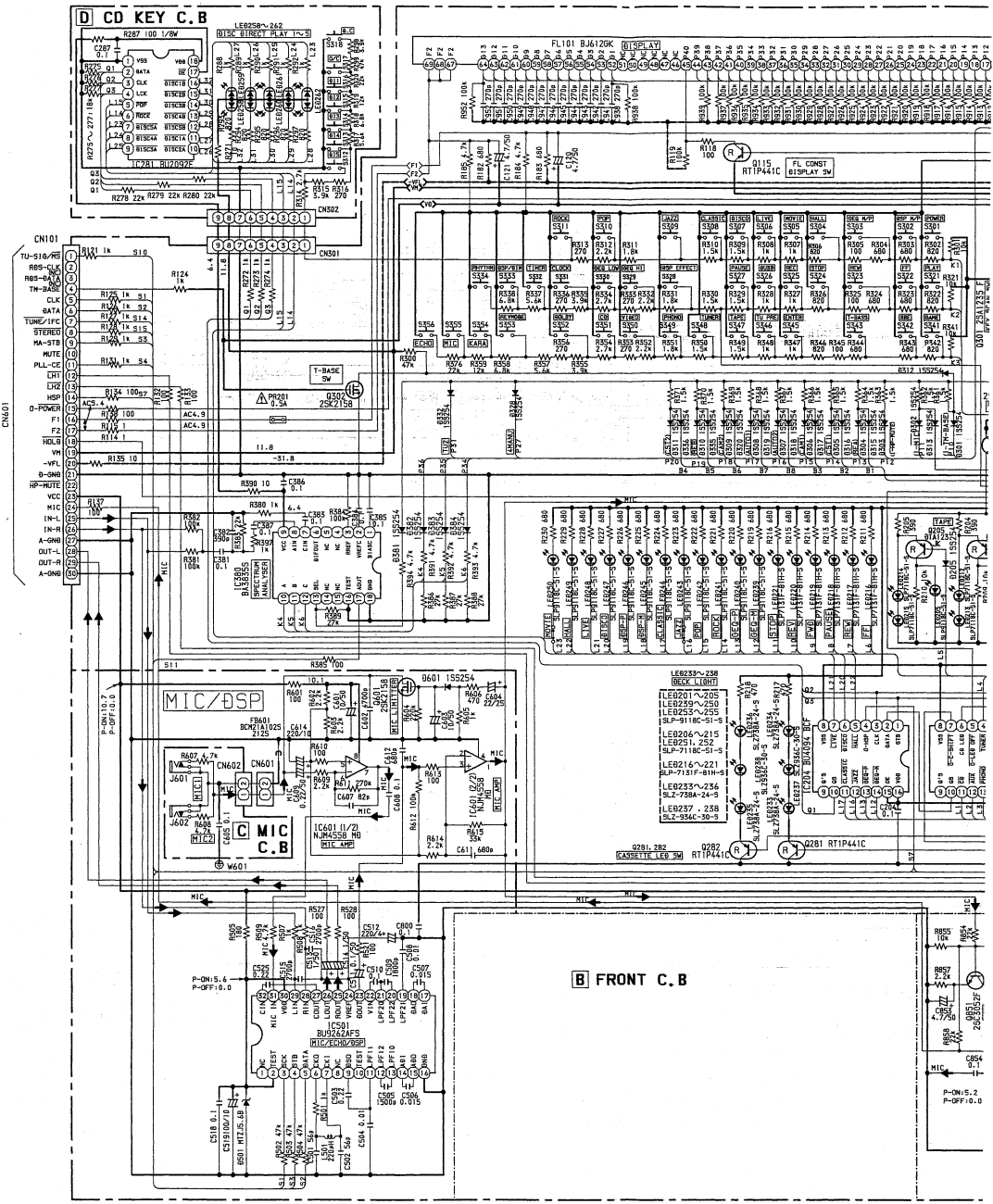

A MAIN C.B
FROM H HEAD-2 C.B
CON351
TO CN351
FROM H HEAD-1 C.B
CON301
TO CN301
TO H FRONT C.B
J801
ANTENNA
AM LOOP
FM 75Ω
TO CD MECHANISM KZ-Y32BSMM
TO CN602
J602
PHONO IN
J602
VIDEO/ AUX IN
J201
PHONES
W104
FROM K2 C.B
CN102
WHT
J202
SUPER WOOFER
J202
SURROUND SPEAKERS
SPEAKER IMP: 8Ω TO 16Ω
J203
J203
SPEAKERS
SPEAKER IMP: 6Ω

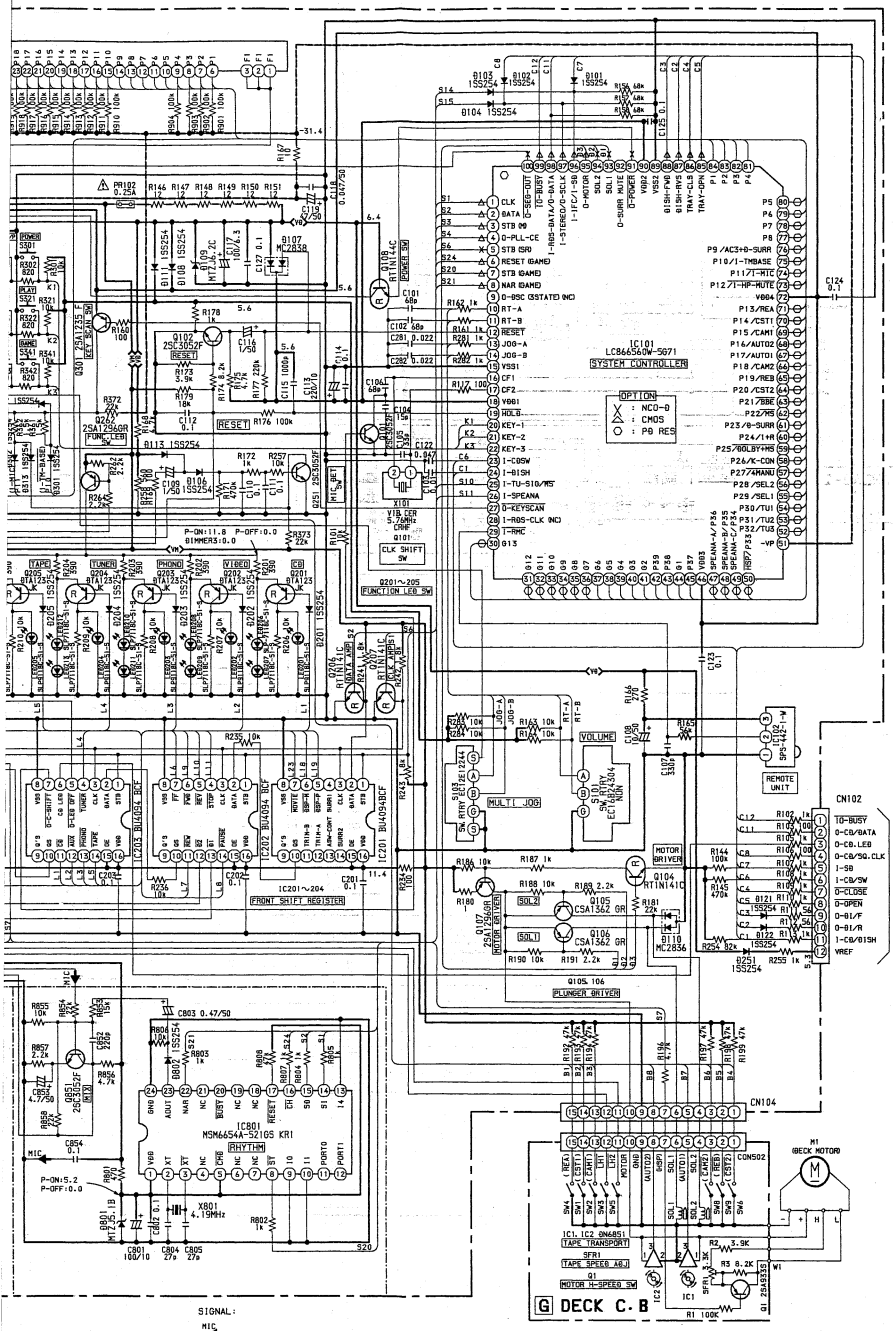
SCHEMATIC DIAGRAM – 1 (MAIN 1 / 2)

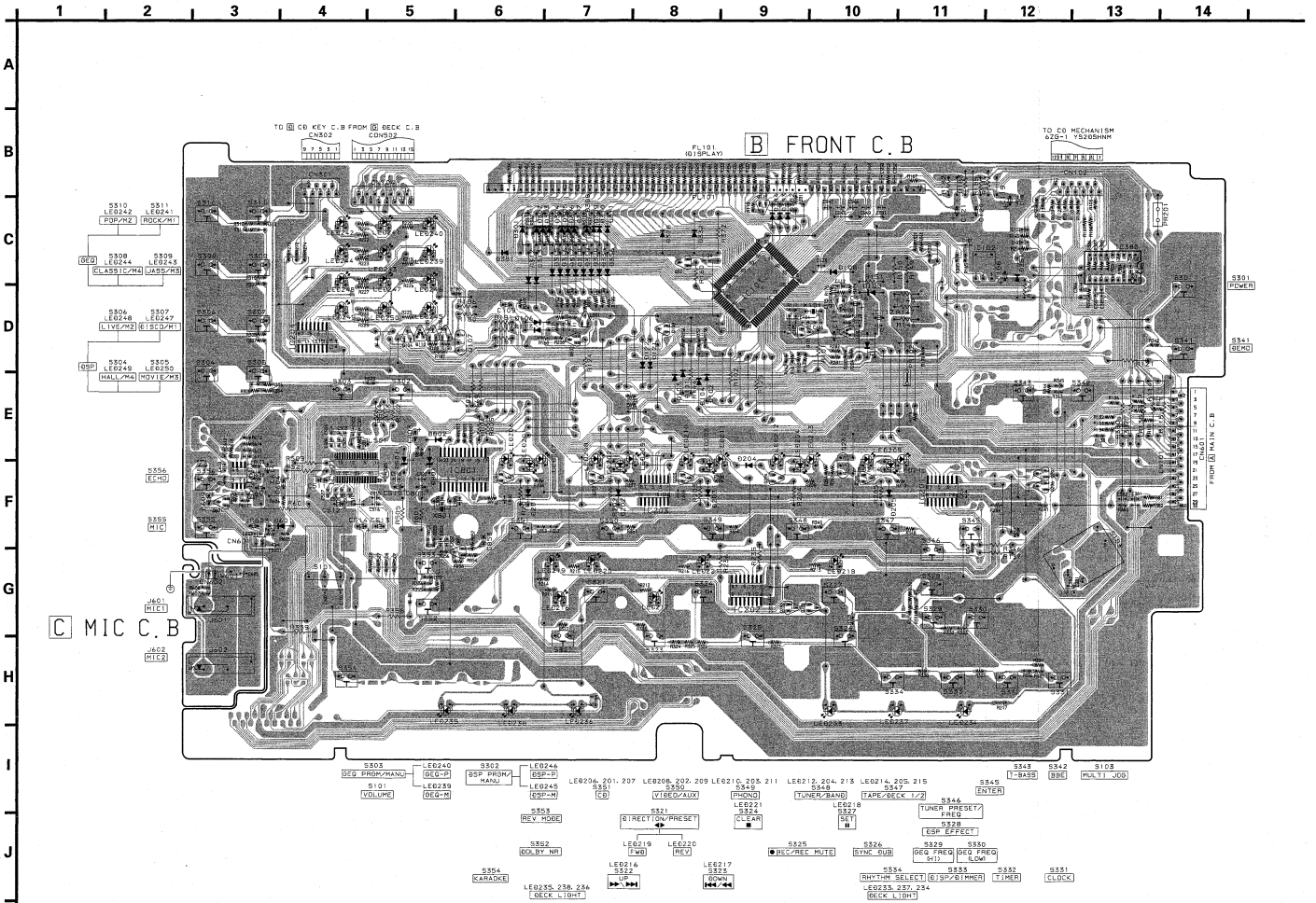


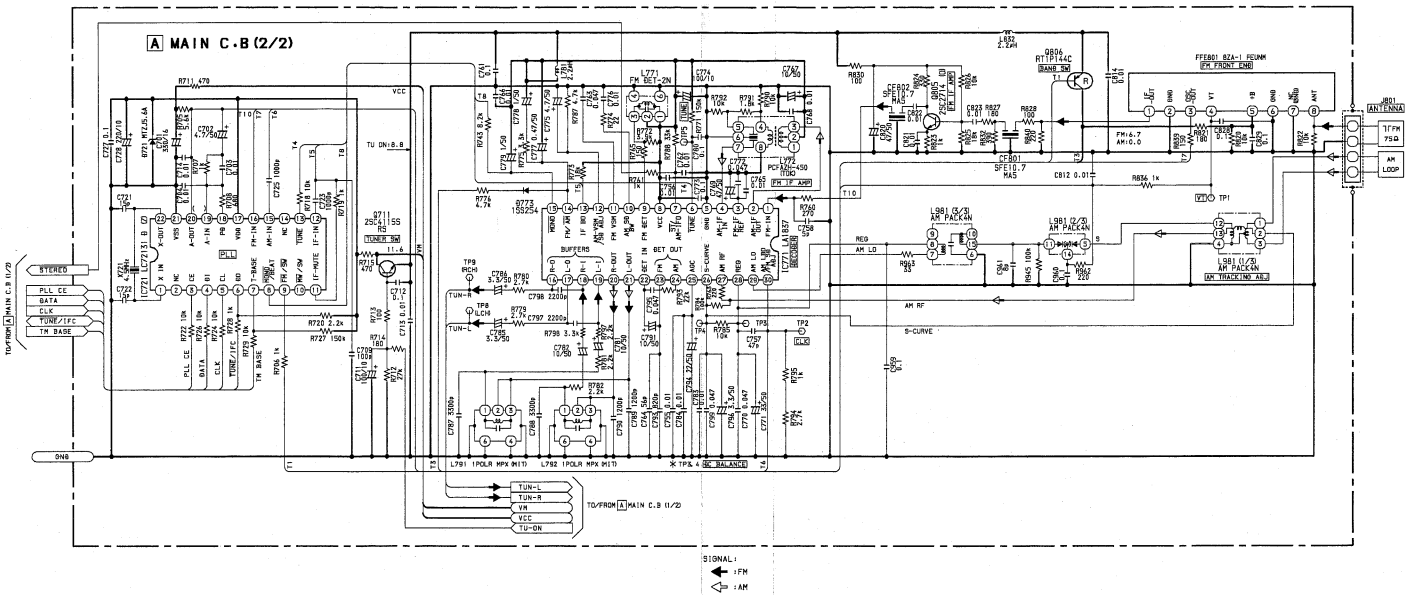

F AC2 C.B
E AC1 C.B
IC601
M62445FP-601
FUNCTION/VF/VOL/GEQ/T-BASS
Q401
KTA1266 GR
Q110 2SC5052F
Q111 KTA1266
Q112 KTA1266
Q105
2SC1359 R5
Q101
2SB1370 E
Q102
2SB1370
Q103
KTC3198 GR
Q104
2SC3501
RY201
OUA2-SH-112L
SIGNAL:
MIC
:MIC
:PB/FM
:REC/AM

SCHEMATIC DIAGRAM – 2 (FRONT / MIC)




IC101
LC866560W-5671
SYSTEM CONTROLLER
OPTION
: NCO-D
: CMOS
: P8 RES
IC201
BU4094BCF
FRONT SHIFT REGISTER
IC801
MSM6654A-521GS KR1
RHYTHM
IC1, IC2 BA6851
TAPE TRANSPORT
SFR1
TAPE SPEED ADJ
Q1
MOTOR H-SPEED SW
G DECK C-B
CN102
CN104
CON502
M1
DECK MOTOR
VOLUME
REMOTE UNIT
MULTI JOG
PLUNGER DRIVER
MOTOR DRIVER
FUNCTION LED SW
CLK SHIFT SW
RESET SW
MIC SET SW
TAPE
TUNER
PHONO
VIDEO
CD
SIGNAL:
MIC
:MIC
:PB
TO CD MECHANISM
CN201 1 YS28B4NN


B FRONT C.B
C MIC C.B
TO CD MECHANISM 620-1 YS20SHNM
TO CD KEY C.B FROM DECK C.B
FROM MAIN C.B
S101 VOLUME
S301 POWER
S341 ECHO
S303 DEQ PROM/MANU
S302 DSP PROM/MANU
S351 CD
S350 VIDEO/AUX
S349 PHONO
S348 TUNER/BAND
S347 TAPE/DECK 1/2
S345 ENTER
S343 T-BASS
S342 BBE
S103 MULTI JOG
S353 REV MODE
S321 DIRECTION/PRESET
S324 CLEAR
S346 TUNER PRESET/FREQ
S328 DSP EFFECT
S352 DOLBY NR
S325 REC/REC MUTE
S326 SYNC DUB
S329 DEQ FREQ (HI)
S330 DEQ FREQ (LOW)
S354 KARAOKE
S322 UP
S323 DOWN
S334 RHYTHM SELECT
S335 DSP/DIMMER
S332 TIMER
S331 CLOCK
S310 POP/M2
S311 ROCK/M1
S308 CLASSIC/M6
S309 JASS/M5
S306 LIVE/M2
S307 DISCO/M1
S304 HALL/M4
S305 MOVIE/M3
S356 ECHO
S355 MIC
J601 MIC1
J602 MIC2


A MAIN C.B (2/2)
VCC
TU ON:8.8
TUNER SW
PLL
STEREO
PLL CE
DATA
CLK
TUNE/IFC
TM BASE
GND
TO/FROM A MAIN C.B (1/2)
TUN-L
TUN-R
VM
VCC
TU-ON
L781 1POLR MPX (MIT)
L782 1POLR MPX (MIT)
TP& 4 DC BALANCE
FM DET-2N
PCF1A0C-450
FM IF AMP
BUFFERS
IF MIX
FM VCO
FM SET IN
FM SET OUT
FM-OUT
AM-IF REF
AM-IF IN
AM LO
AM RF
S-CURVE
REG
LA1837
RECEIVER
AM PACKAN
AM TRACKING ADJ
BAND SW
FM FRONT END
ANTENNA
FM 75Ω
AM LOOP
FM:6.7
AM:0.0
TP1
TP2
TP3
TP4
TP5
TP8
TP9

SIGNAL:
◀ : FM
⇦ : AM

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G－　－	
G－　－	
G－　－	

アイワ株式会社
AIWA CO.,LTD.

9620450, 750038

Tokyo Japan

Printed in Singapore

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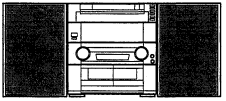
AIWA -02827

aiwa SERVICE

Z-R990



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 2ZM-3MK2 PR5NM
- BASIC CD MECHANISM : 6ZG–1 S2DSHNM
- TYPE : LH

SYSTEM	SPEAKER	CD – CASSEIVER	REMOTE CONTROLLER
Z–R990	SX – WZR99	CX – ZR990	RC – 7AS01

•If requiring information about the CD mechanism, see Service Manual of 6ZG-1, S/M Code No. 09-984-249-90T.

2827

S/M Code No. 09–983–248–1FE

SERVICE MANUAL

SPECIFICATIONS

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Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

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Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
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Antenna	Loop antenna

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Total harmonic distortion	0.15 % (85W, 1 kHz, 6 ohms)
Inputs	VIDEO/AUX : 210 mV (adjustable) PHONO: 340 mV (4 7kohms) MIC 1, MIC 2:1.4 mV (20 kohms)
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Frequency response	CrO2 tape: 50 Hz - 16000Hz Normal tape: 50 Hz - 15000 Hz
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Recording system	AC bias
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<Compact disc player section>

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D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX–WZR99>

Cabinet type	4 way, bass reflex
Speakers	Super woofer: 240 mm cone type Woofer: 140 mm cone type Tweeter: 60 mm cone type Super tweeter : 20 mm ceramic type
Impedance	6 ohms
Output sound pressure level	89 dB/W/m
Dimensions (W x H x D)	300 x 500 x 385 mm
Weight	7.0 kg

<General>

Power requirements	120 V/ 220 – 230 V/ 240 V AC, switchable ,50 / 60 Hz
Power consumption	190 W
Dimensions of main unit (W x H x D)	360 x 394.5 x 382.5 mm
Weight of main unit	11.5 kg

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  Under license from BBE Sound,Inc.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

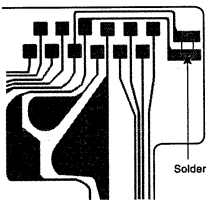
Precaution to replace Optical block

(KSS – 213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.

PICK-UP Assy P.C.B



NOTE ON BEFORE STARTING REPAIR

1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, the secondary defect can occur.
In order to prevent the secondary trouble, perform the following measures before starting repair work.

Discharge procedure

① Remove the AC power cord.
② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connector the other end of the lead wire to metal chassis.
③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
⑤ Check that voltage across C101 and C102 has decreased 1 V or less using a multimeter or an oscilloscope.

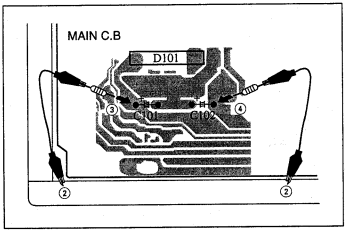


Fig-1

Select a discharging resistor referring to the following table.

Charging voltage (V) (C101, 102)	Discharging resistor (Ω)	Rated power (W)	Parts number
25-48	100	3	87-A00-247-090
49-140	220	5	87-A00-232-090

Note: The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitor on schematic diagram before starting the discharging work.

2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is "H", the MICROCOMPUTER is judged to be operating correctly. When this terminal is "L", the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.
When the MICROCOMPUTER is not defective, the HOLD terminal can also go "L" when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to "L".

- Good or no good judgment of the MICROCOMPUTER

① Turn on the AC main power.
② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the "H" level or not.
③ When the HOLD terminal is "L" level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

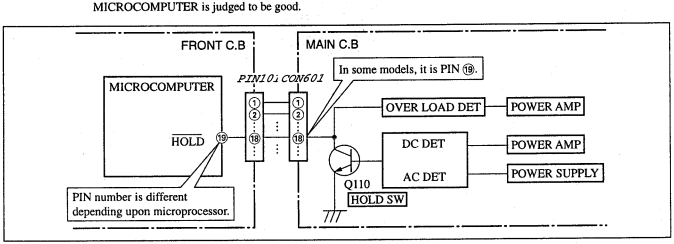


Fig-2-1

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.
When the above described phenomenon occurs, it can leads to wrong judgment as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

① Remove the AC power cord.

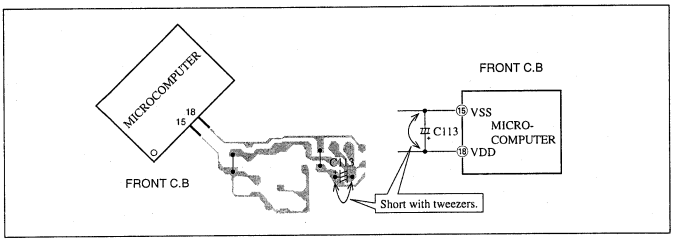


Fig-2-2

② Short the both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

Note: The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-020-454-010		IC,DN6851
	88-MA1-602-010		C-IC,LC866560W-5H04
	87-NP8-614-010		IC,SPS-442-1-W
	87-017-915-080		IC,BU4094BCF
	87-070-289-040		IC,BU 2092F
	87-A20-455-010		IC,HA12211
	87-A20-355-010		IC,CXA1553P
	87-A20-083-010		IC,BA3835S
	87-A20-804-040		C-IC,NJM2152M
	87-A20-613-040		C-IC,BU9262AFS
	87-A20-954-040		C-IC,M62445FP-601
	87-017-888-080		IC,NJM4558MD
	86-NPZ-655-010		IC,LC72131D(Z)
	87-A20-438-010		IC,LA1837
	88-NP5-615-040		C-IC,MSM6654A-521GS-KR1
TRANSISTOR			
	87-026-463-080		TR,2SA933S(RS)
	87-A30-076-080		C-TR,2SC3052F
	89-213-702-010		TR,2SB1370 (1.8W)
	87-026-610-080		TR,RTC3198GR
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-085-070		C-TR,CSA1362GR
	87-A30-196-080		TR,2SC4115RS
	87-A30-075-080		C-TR,2SA1235F
	89-112-965-080		TR,2SA1296 (0.75W)
	87-A30-071-080		C-TR,RT1N 144C
	87-026-609-080		TR,KTA1266GR
	87-A30-105-080		C-TR,RT1P 441C
	87-026-580-080		C-TR,DTA123JK
	87-A30-107-070		C-TR,CMBT5401
	87-A30-190-080		TR,CC5551
	87-A30-097-010		TR,FN 1016
	87-A30-098-010		TR,FP 1016
	87-A30-106-070		C-TR,CMBT5551
	87-A30-162-010		FET,2SK2937
	87-A30-072-080		C-TR,RT1P 144C
	87-A30-074-080		C-TR,RT1P 141C
	87-A30-221-080		C-TR,DTA114WK
	87-A30-087-080		C-FET,2SK2158
	87-026-211-080		TR,DTA144EK
	89-327-143-080		TR,2SC2714 (0.1W)
DIODE			
	87-A40-470-080		DIODE,1SS254
	87-A40-224-010		DIODE,GBU8D
	87-A40-269-080		C-DIODE,MC2836
	87-A40-270-080		C-DIODE,MC2838
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-344-080		ZENER,MTZJ6.2C
	87-A40-341-080		ZENER,MTZJ 36 A
	87-A40-345-080		ZENER,MTZJ10C
	87-A40-004-080		ZENER,MTZJ16A
	87-A40-438-080		ZENER,MTZJ4.7A
	87-A40-274-010		DIODE,FMB-G16L
	87-070-136-080		ZENER,MTZJ5.1B
	87-A40-488-080		DIODE,1SS244
	87-017-931-080		ZENER,MTZJ5.6B
	87-A40-002-080		ZENER,MTZJ5.1C
	87-A40-234-080		ZENER,MTZJ5.6A
MAIN C.B			
	88-906-251-110		FF-CABLE,6P 1.25
C101	87-A10-231-090		CAP,E 3300-80
C102	87-A10-231-090		CAP,E 3300-80
C103	87-016-658-090		CAP,E 4700-35 SMG
C104	87-016-658-090		CAP,E 4700-35 SMG
C105	87-012-368-080		C-CAP,S 0.1-50 F
C106	87-012-368-080		C-CAP,S 0.1-50 F
C107	87-012-368-080		C-CAP,S 0.1-50 F
C108	87-012-368-080		C-CAP,S 0.1-50 F
C109	87-010-196-080		CHIP CAPACITOR,0.1-25
C110	87-010-196-080		CHIP CAPACITOR,0.1-25
C111	87-010-196-080		CHIP CAPACITOR,0.1-25
C112	87-010-196-080		CHIP CAPACITOR,0.1-25
C113	87-010-247-080		CAP, ELECT 100-50V
C116	87-010-247-080		CAP, ELECT 100-50V
C117	87-010-430-080		CAP, ELECT 100-63
C118	87-010-263-080		CAP, ELECT 100-10V
C119	87-010-260-080		CAP, ELECT 47-25V
C120	87-010-403-080		CAP, ELECT 3.3-50V
C121	87-012-140-080		CAP 470P
C123	87-010-247-080		CAP, ELECT 100-50V
C124	87-010-112-080		CAP, ELECT 100-16V
C125	87-010-235-080		CAP,E 470-16 SME
C209	87-010-546-080		CAP, ELECT 0.33-50V
C210	87-010-546-080		CAP, ELECT 0.33-50V
C211	87-010-183-080		C-CAP,S 2700P-50 B
C212	87-010-183-080		C-CAP,S 2700P-50 B
C213	87-010-186-080		CAP,CHIP 4700P
C214	87-010-186-080		CAP,CHIP 4700P
C215	87-010-403-080		CAP, ELECT 3.3-50V
C216	87-010-403-080		CAP, ELECT 3.3-50V
C217	87-010-913-080		CAP, ELECT 47-25BP
C218	87-010-913-080		CAP, ELECT 47-25BP
C223	87-010-197-080		CAP, CHIP 0.01 DM
C224	87-010-197-080		CAP, CHIP 0.01 DM
C229	87-A10-812-080		C-CAP,S 220P-200 J CH
C230	87-A10-812-080		C-CAP,S 220P-200 J CH
C233	87-010-544-080		CAP, ELECT 0.1-50V
C234	87-010-544-080		CAP, ELECT 0.1-50V
C235	87-010-196-080		CHIP CAPACITOR,0.1-25
C237	87-012-368-080		C-CAP,S 0.1-50 F
C238	87-012-368-080		C-CAP,S 0.1-50 F
C239	87-012-368-080		C-CAP,S 0.1-50 F
C240	87-012-368-080		C-CAP,S 0.1-50 F
C247	87-010-186-080		C-CAP,S 4700P
C248	87-010-186-080		C-CAP,S 4700P
C280	87-010-191-080		C-CAP,S 0.015-50 Z F GRM
C301	87-010-318-080		C-CAP,S 47P-50 CH
C302	87-010-318-080		C-CAP,S 47P-50 CH
C303	87-012-157-080		C-CAP,S 330P-50 CH
C304	87-012-157-080		C-CAP,S 330P-50 CH
C305	87-012-145-080		CAP, CHIP S 270P CH
C306	87-012-145-080		CAP, CHIP S 270P CH
C307	87-010-196-080		CHIP CAPACITOR,0.1-25
C311	87-010-198-080		CAP, CHIP 0.022
C312	87-010-198-080		CAP, CHIP 0.022
C313	87-010-182-080		C-CAP,S 2200P-50 B
C314	87-010-182-080		C-CAP,S 2200P-50 B
C315	87-010-181-080		CAP,CHIP S 1800P
C316	87-010-181-080		CAP,CHIP S 1800P
C317	87-012-142-080		CAP, S 0.33-16
C318	87-012-142-080		CAP, S 0.33-16
C319	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C320	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C321	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C322	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C324	87-010-260-080		CAP, ELECT 47-25V
C325	87-010-370-080		CAP,E 330-6.3 SME
C327	87-010-404-080		CAP, ELECT 4.7-50V
C328	87-010-404-080		CAP, ELECT 4.7-50V
C332	87-010-196-080		CHIP CAPACITOR,0.1-25
C335	87-010-401-080		CAP, ELECT 1-50V
C336	87-010-401-080		CAP, ELECT 1-50V
C337	87-010-196-080		CHIP CAPACITOR,0.1-25

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C339	87-010-196-080		CHIP CAPACITOR,0.1-25
C340	87-010-196-080		CHIP CAPACITOR,0.1-25
C351	87-012-140-080		CAP 470P
C352	87-012-140-080		CAP 470P
C354	87-010-175-080		CAP 560P
C355	87-010-178-080		CHIP CAP 1000P
C356	87-010-260-080		CAP, ELECT 47-25V
C357	87-010-197-080		CAP, CHIP 0.01 DM
C358	87-010-183-080		C-CAP,S 2700P-50 B
C359	87-010-183-080		C-CAP,S 2700P-50 B
C360	87-010-183-080		C-CAP,S 2700P-50 B
C370	87-010-196-080		CHIP CAPACITOR,0.1-25
C371	87-010-179-080		CAP,CHIP S B1200P
C372	87-010-179-080		CAP,CHIP S B1200P
C373	87-010-179-080		CAP,CHIP S B1200P
C374	87-010-179-080		CAP,CHIP S B1200P
C375	87-010-545-080		CAP, ELECT 0.22-50V
C376	87-010-545-080		CAP, ELECT 0.22-50V
C378	87-010-196-080		CHIP CAPACITOR,0.1-25
C381	87-010-197-080		CAP, CHIP 0.01 DM
C382	87-010-318-080		C-CAP,S 47P-50 CH
C383	87-010-197-080		CAP, CHIP 0.01 DM
C384	87-010-402-080		CAP, ELECT 2.2-50V
C385	87-010-184-080		CHIP CAPACITOR 3300P(K)
C386	87-010-196-080		CHIP CAPACITOR,0.1-25
C401	87-010-405-080		CAP, ELECT 10-50V
C402	87-010-405-080		CAP, ELECT 10-50V
C403	87-010-183-080		C-CAP,S 2700P-50 B
C404	87-010-183-080		C-CAP,S 2700P-50 B
C405	87-010-193-080		CHIP CAPACITOR,0.033
C406	87-010-193-080		CHIP CAPACITOR,0.033
C407	87-010-405-080		CAP, ELECT 10-50V
C408	87-010-405-080		CAP, ELECT 10-50V
C409	87-010-380-080		CAP, ELECT 47-16V
C410	87-010-380-080		CAP, ELECT 47-16V
C411	87-010-405-080		CAP, ELECT 10-50V
C412	87-010-112-080		CAP, ELECT 100-16V
C415	87-010-184-080		CHIP CAPACITOR 3300P(K)
C416	87-010-184-080		CHIP CAPACITOR 3300P(K)
C457	87-010-404-080		CAP, ELECT 4.7-50 SME
C458	87-010-404-080		CAP, ELECT 4.7-50 SME
C516	87-010-196-080		CHIP CAPACITOR,0.1-25
C601	87-010-180-080		C-CER 1500P
C602	87-010-180-080		C-CER 1500P
C613	87-016-081-080		C-CAP,S 0.1-16 RK
C614	87-016-081-080		C-CAP,S 0.1-16 RK
C619	87-010-185-080		C-CAP,S 3900P-50 B
C620	87-010-185-080		C-CAP,S 3900P-50 B
C621	87-010-401-080		CAP, ELECT 1-50V
C622	87-010-401-080		CAP, ELECT 1-50V
C625	87-010-405-080		CAP, ELECT 10-50V
C626	87-010-405-080		CAP, ELECT 10-50V
C629	87-010-405-080		CAP, ELECT 10-50V
C630	87-010-213-080		C-CAP,S 0.015-50 B
C631	87-010-992-080		C-CAP,S 0.047-25 B
C632	87-010-263-080		CAP, ELECT 100-10V
C633	87-010-263-080		CAP, ELECT 100-10V
C634	87-010-196-080		CHIP CAPACITOR,0.1-25
C635	87-010-196-080		CHIP CAPACITOR,0.1-25
C636	87-010-196-080		CHIP CAPACITOR,0.1-25
C637	87-010-183-080		C-CAP,S 2700P-50 B
C641	87-010-196-080		CHIP CAPACITOR,0.1-25
C667	87-010-196-080		CHIP CAPACITOR,0.1-25
C701	87-010-381-080		CAP, ELECT 330-16V
C702	87-010-404-080		CAP, ELECT 4.7-50V
C703	87-010-197-080		CAP, CHIP 0.01 DM
C704	87-010-197-080		CAP, CHIP 0.01 DM
C709	87-010-322-080		C-CAP,S 100P-50 CH
C711	87-010-263-080		CAP, ELECT 100-10V
C712	87-010-196-080		CHIP CAPACITOR,0.1-25

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C713	87-010-197-080		CAP, CHIP 0.01 DM
C714	87-010-197-080		CAP, CHIP 0.01 DM
C721	87-010-312-080		C-CAP,S 15P-50 CH
C722	87-010-312-080		C-CAP,S 15P-50 CH
C723	87-010-178-080		CHIP CAP 1000P
C725	87-010-178-080		CHIP CAP 1000P
C727	87-010-196-080		CHIP CAPACITOR,0.1-25
C728	87-010-248-080		CAP, ELECT 220-10V
C755	87-010-197-080		CAP, CHIP 0.01 DM
C756	87-010-197-080		CAP, CHIP 0.01 DM
C757	87-010-318-080		C-CAP,S 47P-50 CH
C758	87-010-149-080		C-CAP,S 5P-50 CH
C761	87-010-196-080		CHIP CAPACITOR,0.1-25
C762	87-010-197-080		CAP, CHIP 0.01 DM
C763	87-010-194-080		CAP, CHIP 0.047
C764	87-010-319-080		C-CAP,S 56P-50 CH
C765	87-010-197-080		CAP, CHIP 0.01 DM
C766	87-010-197-080		CAP, CHIP 0.01 DM
C767	87-010-405-080		CAP, ELECT 10-50V
C768	87-010-197-080		CAP, CHIP 0.01 DM
C769	87-010-408-080		CAP, ELECT 47-50V
C770	87-015-821-080		C-CAP 0.047
C771	87-010-407-080		CAP, ELECT 33-50V
C772	87-010-194-080		CAP, CHIP 0.047
C773	87-010-196-080		CHIP CAPACITOR,0.1-25
C774	87-010-263-080		CAP, ELECT 100-10V
C775	87-010-404-080		CAP, ELECT 4.7-50V
C776	87-010-197-080		CAP, CHIP 0.01 DM
C777	87-010-400-080		CAP, ELECT 0.47-50V
C778	87-010-401-080		CAP, ELECT 1-50V
C779	87-010-401-080		CAP, ELECT 1-50V
C780	87-010-196-080		CHIP CAPACITOR,0.1-25
C781	87-010-405-080		CAP, ELECT 10-50V
C782	87-010-405-080		CAP, ELECT 10-50V
C783	87-015-819-080		CAPACITOR,0.01
C784	87-010-197-080		CAP, CHIP 0.01 DM
C785	87-010-403-080		CAP, ELECT 3.3-50V
C786	87-010-403-080		CAP, ELECT 3.3-50V
C787	87-010-184-080		CHIP CAPACITOR 3300P(K)
C788	87-010-184-080		CHIP CAPACITOR 3300P(K)
C789	87-010-179-080		CAP,CHIP S B1200P
C790	87-010-179-080		CAP,CHIP S B1200P
C791	87-010-405-080		CAP, ELECT 10-50V
C793	87-010-177-080		C-CAP,S 820P-50 SL
C794	87-010-406-080		CAP, ELECT 22-50
C795	87-010-596-080		CAP, S 0.047-16
C796	87-010-403-080		CAP, ELECT 3.3-50V
C797	87-010-182-080		C-CAP,S 2200P-50 B
C798	87-010-182-080		C-CAP,S 2200P-50 B
C799	87-010-194-080		CAP, CHIP 0.047
C812	87-010-197-080		CAP, CHIP 0.01 DM
C814	87-010-197-080		CAP, CHIP 0.01 DM
C820	87-010-408-080		CAP, ELECT 47-50V
C821	87-010-197-080		CAP, CHIP 0.01 DM
C822	87-010-197-080		CAP, CHIP 0.01 DM
C823	87-010-197-080		CAP, CHIP 0.01 DM
C828	87-010-196-080		CHIP CAPACITOR,0.1-25
C829	87-010-196-080		CHIP CAPACITOR,0.1-25
C959	87-010-196-080		CHIP CAPACITOR,0.1-25
C960	87-010-196-080		CHIP CAPACITOR,0.1-25
C961	87-010-152-080		C-CAP,S 8P-50 CH
CF801	87-008-261-010		FILTER, SFE10.7MA5-A
CF802	87-008-261-010		FILTER, SFE10.7MA5-A
FB601	87-A50-190-080		C-COIL,S BLM21A102S
FFE801	A8-8ZA-190-030		8ZA-1 FEUNM
J201	87-A60-488-010		JACK,DIA6.3 BLK ST W/SW KM16AT
J202	87-A60-547-010		JACK,PIN 4P R/W/B
J203	87-033-240-010		TERMINAL,SP 4P32SV1-05
J602	87-099-625-010		JACK PIN 4P,RVS (KM)
J801	87-033-239-010		TERMINAL,HSP-154V-2

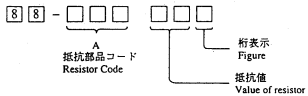
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
L201	87-003-383-010		COIL,10H-S
L202	87-003-383-010		COIL,10H-S
L301	87-A50-049-010		COIL,TRAP 85K(COI)
L302	87-A50-049-010		COIL,TRAP 85K(COI)
L351	87-007-342-010		COIL,OSC 85K BIAS
L771	87-A50-266-010		COIL,FM DET-2N(TOK)
L772	87-A90-733-010		FLTR,PCFAZH-450 (TOK)
L781	87-005-847-080		COIL,2.2UH(CECS)
L791	87-A50-209-010		COIL,1POLE MPX(MIT)
L792	87-A50-209-010		COIL,1POLE MPX(MIT)
L832	86-NFZ-694-080		COIL,2.2UH K CECS
L981	87-NF4-650-010		COIL,AM PACK 4N(TOK)
R237	87-A00-262-080		RES,M/F 0.15-2W J
R238	87-A00-262-080		RES,M/F 0.15-2W J
R239	87-A00-262-080		RES,M/F 0.15-2W J
R240	87-A00-262-080		RES,M/F 0.15-2W J
RY101	87-045-389-010		RELAY,OSA-SS-212DM5
RY201	87-045-382-010		RELAY,OUAZ-SH-112L
SFR301	87-A90-557-080		SFR,33K H HOKU
SFR302	87-A90-557-080		SFR,33K H HOKU
SFR303	87-A90-557-080		SFR,33K H HOKU
SFR304	87-A90-557-080		SFR,33K H HOKU
SFR305	87-A90-433-080		SFR,50K H NVZ6TLTA
SFR306	87-A90-433-080		SFR,50K H NVZ6TLTA
SFR351	87-A90-433-080		SFR,50K H NVZ6TLTA
SFR352	87-A90-433-080		SFR,50K H NVZ6TLTA
TH201	87-A90-221-080		C-THMS,100K
TH202	87-A90-221-080		C-THMS,100K
X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309
FRONT C.B			
	85-MA2-602-010		CABLE,FFC 15P-1.25
	88-912-281-110		FF-CABLE,12P 1.25
	88-909-231-110		FF-CABLE,9P 1.25
C101	87-010-198-080		CAP, CHIP 0.022
C102	87-010-198-080		CAP, CHIP 0.022
C103	87-010-197-080		CAP, CHIP 0.01 DM
C104	87-010-312-080		C-CAP,S 15P-50 CH
C105	87-010-316-080		C-CAP,S 33P-50 CH
C106	87-010-320-080		CHIP CAP 68P
C107	87-012-157-080		C-CAP,S 330P-50 CH
C108	87-010-405-040		CAP,E 10-50
C109	87-010-071-040		CAP,E 1-50 5L
C110	87-010-196-080		CHIP CAPACITOR,0.1-25
C111	87-010-196-080		CHIP CAPACITOR,0.1-25
C112	87-010-196-080		CHIP CAPACITOR,0.1-25
C113	87-A10-189-040		CAP,E 220-10
C114	87-010-196-080		CHIP CAPACITOR,0.1-25
C115	87-010-178-080		CHIP CAP 1000P
C116	87-010-071-040		CAP,E 1-50 5L
C117	87-010-079-040		CAP,E 100-6.3 5L
C118	87-012-369-080		C-CAP,S 0.047-50F
C119	87-010-408-040		CAP,E 47-50 SME
C120	87-010-421-040		CAP,E 4.7-50 5L
C121	87-010-421-040		CAP,E 4.7-50 5L
C122	87-010-194-080		CAP, CHIP 0.047
C123	87-010-196-080		CHIP CAPACITOR,0.1-25
C124	87-010-196-080		CHIP CAPACITOR,0.1-25
C125	87-010-196-080		CHIP CAPACITOR,0.1-25
C127	87-010-196-080		CHIP CAPACITOR,0.1-25
C201	87-010-196-080		CHIP CAPACITOR,0.1-25
C202	87-010-196-080		CHIP CAPACITOR,0.1-25
C203	87-010-196-080		CHIP CAPACITOR,0.1-25
C204	87-010-196-080		CHIP CAPACITOR,0.1-25
C281	87-010-198-080		CAP, CHIP 0.022
C282	87-010-198-080		CAP, CHIP 0.022
C381	87-010-196-080		CHIP CAPACITOR,0.1-25
C382	87-012-158-080		C-CAP,S 390P-50 CH
C383	87-010-196-080		CHIP CAPACITOR,0.1-25
C384	87-010-196-080		CHIP CAPACITOR,0.1-25
C385	87-010-196-080		CHIP CAPACITOR,0.1-25
C386	87-010-196-080		CHIP CAPACITOR,0.1-25
C387	87-010-196-080		CHIP CAPACITOR,0.1-25
C501	87-010-319-080		C-CAP,S 56P-50 CH
C502	87-010-319-080		C-CAP,S 56P-50 CH
C503	87-012-393-080		C-CAP,S 0.22-16 R K
C504	87-010-197-080		CAP, CHIP 0.01 DM
C505	87-010-180-080		C-CER 1500P
C506	87-010-213-080		C-CAP,S 0.015-50 B
C507	87-010-213-080		C-CAP,S 0.015-50 B
C508	87-010-197-080		CAP, CHIP 0.01 DM
C509	87-010-181-080		CAP,CHIP S 1800P
C510	87-010-196-080		CHIP CAPACITOR,0.1-25
C511	87-010-067-040		CAP,E 0.1-50 5L
C512	87-010-503-040		CAP,E 220-4 GAS
C513	87-010-071-040		CAP,E 1-50 5L
C514	87-010-071-040		CAP,E 1-50 5L
C515	87-010-183-080		C-CAP,S 2700P-50 B
C516	87-010-183-080		C-CAP,S 2700P-50 B
C518	87-010-196-080		CHIP CAPACITOR,0.1-25
C519	87-010-263-040		CAP,E 100-10
C525	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C601	87-010-405-040		CAP,E 10-50
C602	87-010-186-080		CAP,CHIP 4700P
C603	87-010-405-040		CAP,E 10-50
C604	87-010-382-040		CAP,E 22-25 SME
C607	87-010-321-080		CHIP CAPACITOR,82P(J)
C608	87-010-196-080		CHIP CAPACITOR,0.1-25
C609	87-010-068-040		CAP E 0.22-50 5L
C611	87-010-177-080		C-CAP,S 820P-50 SL
C612	87-010-176-080		C-CAP,S 680P-50 SL
C614	87-010-248-040		CAP,E 220-10 SME
C801	87-010-263-040		CAP,E 100-10
C802	87-010-196-080		CHIP CAPACITOR,0.1-25
C803	87-010-400-040		CAP,E 0.47-50
C804	87-010-315-080		C-CAP,S 27P-50 CH
C805	87-010-315-080		C-CAP,S 27P-50 CH
C852	87-012-156-080		C-CAP,S 220P-50 CH
C853	87-010-404-040		CAP,E 4.7-50 SME
C854	87-010-196-080		CHIP CAPACITOR,0.1-25
C938	87-012-145-080		CAP, CHIP S 270P CH
C941	87-012-145-080		CAP, CHIP S 270P CH
C942	87-012-145-080		CAP, CHIP S 270P CH
C943	87-012-145-080		CAP, CHIP S 270P CH
C944	87-012-145-080		CAP, CHIP S 270P CH
C945	87-012-145-080		CAP, CHIP S 270P CH
C946	87-012-145-080		CAP, CHIP S 270P CH
C947	87-012-145-080		CAP, CHIP S 270P CH
C948	87-012-145-080		CAP, CHIP S 270P CH
C949	87-012-145-080		CAP, CHIP S 270P CH
C950	87-012-145-080		CAP, CHIP S 270P CH
C951	87-012-145-080		CAP, CHIP S 270P CH
C952	87-012-145-080		CAP, CHIP S 270P CH
FB601	87-A50-190-080		C-COIL,S BLM21A102S
FL101	88-MA1-604-010		FL,BJ612GK
L501	87-005-448-080		COIL 220UH,K
LED201	87-070-201-080		LED,SLP911BC-51-S RED
LED202	87-070-201-080		LED,SLP911BC-51-S RED
LED203	87-070-201-080		LED,SLP911BC-51-S RED
LED204	87-070-201-080		LED,SLP911BC-51-S RED
LED205	87-070-201-080		LED,SLP911BC-51-S RED
LED206	87-070-197-080		LED,SLP711BC-51-S RED
LED207	87-070-197-080		LED,SLP711BC-51-S RED
LED208	87-070-197-080		LED,SLP711BC-51-S RED
LED209	87-070-197-080		LED,SLP711BC-51-S RED
LED210	87-070-197-080		LED,SLP711BC-51-S RED
LED211	87-070-197-080		LED,SLP711BC-51-S RED
LED212	87-070-197-080		LED,SLP711BC-51-S RED
LED213	87-070-197-080		LED,SLP711BC-51-S RED

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
LED214	87-070-197-080		LED,SLP7118C-51-S RED
LED215	87-070-197-080		LED,SLP7118C-51-S RED
LED216	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN
LED217	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN
LED218	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN
LED219	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN
LED220	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN
LED221	87-A40-446-080		LED,SLP-7131F-81H-S-T1 P-GRN
LED233	87-070-278-010		LED,SLZ-738A-24-S P-GRN
LED234	87-070-278-010		LED,SLZ-738A-24-S P-GRN
LED235	87-070-278-010		LED,SLZ-738A-24-S P-GRN
LED236	87-070-278-010		LED,SLZ-738A-24-S P-GRN
LED237	87-070-290-010		LED,SLZ 936-30-S RED
LED238	87-070-290-010		LED,SLZ 936-30-S RED
LED239	87-070-201-080		LED,SLP9118C-51-S RED
LED240	87-070-201-080		LED,SLP9118C-51-S RED
LED241	87-070-201-080		LED,SLP9118C-51-S RED
LED242	87-070-201-080		LED,SLP9118C-51-S RED
LED243	87-070-201-080		LED,SLP9118C-51-S RED
LED244	87-070-201-080		LED,SLP9118C-51-S RED
LED245	87-070-201-080		LED,SLP9118C-51-S RED
LED246	87-070-201-080		LED,SLP9118C-51-S RED
LED247	87-070-201-080		LED,SLP9118C-51-S RED
LED248	87-070-201-080		LED,SLP9118C-51-S RED
LED249	87-070-201-080		LED,SLP9118C-51-S RED
LED250	87-070-201-080		LED,SLP9118C-51-S RED
⚠ PR201	87-A90-393-080		PROTECTOR,0.5A 491 SERISE 60V
R301	87-022-355-080		C-RES,S10K-1/10W F
R321	87-022-355-080		C-RES,S10K-1/10W F
R341	87-022-355-080		C-RES,S10K-1/10W F
S101	87-A90-535-010		SW,RTRY EC16B24304
S103	87-A90-792-010		SW,RTRY EC12E12244 ENCORDER
S301	87-A90-095-080		SW,TACT EVQ11G04M
S302	87-A90-095-080		SW,TACT EVQ11G04M
S303	87-A90-095-080		SW,TACT EVQ11G04M
S304	87-A90-095-080		SW,TACT EVQ11G04M
S305	87-A90-095-080		SW,TACT EVQ11G04M
S306	87-A90-095-080		SW,TACT EVQ11G04M
S307	87-A90-095-080		SW,TACT EVQ11G04M
S308	87-A90-095-080		SW,TACT EVQ11G04M
S309	87-A90-095-080		SW,TACT EVQ11G04M
S310	87-A90-095-080		SW,TACT EVQ11G04M
S311	87-A90-095-080		SW,TACT EVQ11G04M
S321	87-A90-095-080		SW,TACT EVQ11G04M
S322	87-A90-095-080		SW,TACT EVQ11G04M
S323	87-A90-095-080		SW,TACT EVQ11G04M
S324	87-A90-095-080		SW,TACT EVQ11G04M
S325	87-A90-095-080		SW,TACT EVQ11G04M
S326	87-A90-095-080		SW,TACT EVQ11G04M
S327	87-A90-095-080		SW,TACT EVQ11G04M
S328	87-A90-095-080		SW,TACT EVQ11G04M
S329	87-A90-095-080		SW,TACT EVQ11G04M
S330	87-A90-095-080		SW,TACT EVQ11G04M
S331	87-A90-095-080		SW,TACT EVQ11G04M
S332	87-A90-095-080		SW,TACT EVQ11G04M
S333	87-A90-095-080		SW,TACT EVQ11G04M
S334	87-A90-095-080		SW,TACT EVQ11G04M
S341	87-A90-095-080		SW,TACT EVQ11G04M
S342	87-A90-095-080		SW,TACT EVQ11G04M
S343	87-A90-095-080		SW,TACT EVQ11G04M
S345	87-A90-095-080		SW,TACT EVQ11G04M
S346	87-A90-095-080		SW,TACT EVQ11G04M
S347	87-A90-095-080		SW,TACT EVQ11G04M
S348	87-A90-095-080		SW,TACT EVQ11G04M
S349	87-A90-095-080		SW,TACT EVQ11G04M
S350	87-A90-095-080		SW,TACT EVQ11G04M
S351	87-A90-095-080		SW,TACT EVQ11G04M
S352	87-A90-095-080		SW,TACT EVQ11G04M
S353	87-A90-095-080		SW,TACT EVQ11G04M
S354	87-A90-095-080		SW,TACT EVQ11G04M

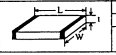
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S355	87-A90-095-080		SW,TACT EVQ11G04M
S356	87-A90-095-080		SW,TACT EVQ11G04M
X101	87-A70-070-080		VIB,CER 5.76MHZ CRHF
X801	87-A70-075-080		VIB,CER 4.19MHZ CRHF
MIC C.B			
C605	87-010-196-080		CHIP CAPACITOR,0.1-25
J601	87-099-659-010		JACK,6.3 JY-6314-01130
J602	87-099-659-010		JACK,6.3 JY-6314-01130
CD KEY C.B			
C287	87-010-196-080		CHIP CAPACITOR,0.1-25
CN302	87-099-202-010		CONN,9P 6216 H
LED258	88-MA1-630-080		LED,SML76755WN
LED259	88-MA1-630-080		LED,SML76755WN
LED260	88-MA1-630-080		LED,SML76755WN
LED261	88-MA1-630-080		LED,SML76755WN
LED262	88-MA1-630-080		LED,SML76755WN
S312	87-A90-095-080		SW,TACT EVQ11G04M
S313	87-A90-095-080		SW,TACT EVQ11G04M
S314	87-A90-095-080		SW,TACT EVQ11G04M
S315	87-A90-095-080		SW,TACT EVQ11G04M
S316	87-A90-095-080		SW,TACT EVQ11G04M
S317	87-A90-095-080		SW,TACT EVQ11G04M
S318	87-A90-095-080		SW,TACT EVQ11G04M
AC1 C.B			
⚠ F101	87-035-459-010		FUSE,5A 250V
⚠ FC101	87-033-147-010		FUSE CLAMP
⚠ FC102	87-033-147-010		FUSE CLAMP
⚠ PT101	88-MA1-609-010		PT,8MA-1 LH
⚠ S101	87-A90-165-010		SW,SL 1-2-3 SWS2301
⚠ T101	87-A60-317-010		TERMINAL, 1P MSC
⚠ T102	87-A60-317-010		TERMINAL, 1P MSC
AC2 C.B			
⚠ PR101	87-026-682-080		PROTECTOR,10A 60V491
⚠ PR102	87-026-682-080		PROTECTOR,10A 60V491
⚠ PR103	87-026-682-080		PROTECTOR,10A 60V491
⚠ PR104	87-026-682-080		PROTECTOR,10A 60V491
W104	85-NF5-628-010		F-CABLE 7P-2.5
DECK C.B			
W001	82-ZM3-601-019		RBN CORD,4P-75
SFR1	87-024-581-019		SFR,3.2K DIA 6H
SOL1	82-ZM1-626-010		SOL ASSY,27K
SOL2	82-ZM1-626-010		SOL ASSY,27K
SW1	87-A90-248-019		SW,MICRO ESE11SH2CXQ
SW2	87-A90-248-019		SW,MICRO ESE11SH2CXQ
SW3	87-A90-248-019		SW,MICRO ESE11SH2CXQ
SW4	87-036-110-010		SW,MICRO SPPB62
SW5	87-036-110-010		SW,MICRO SPPB62
SW6	87-036-110-010		SW,MICRO SPPB62
SW8	87-A90-248-019		SW,MICRO ESE11SH2CXQ
SW9	87-036-110-010		SW,MICRO SPPB62
HEAD-1 C.B			
	85-ZM3-601-010		PWB,FLEX I
HEAD-2 C.B			
	85-ZM3-601-010		PWB,FLEX I
CN351	83-NEG-608-010		CONN ASSY 8P-RPB

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

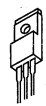
TRANSISTOR ILLUSTRATION

E C B

KTA1266GR
KTC3198GR

E C B

CC5551



B C E

2SB1370
FN1016
FP1016

B C E

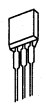
2SC4115S

B C E

2SA1296

G D S

2SK2937



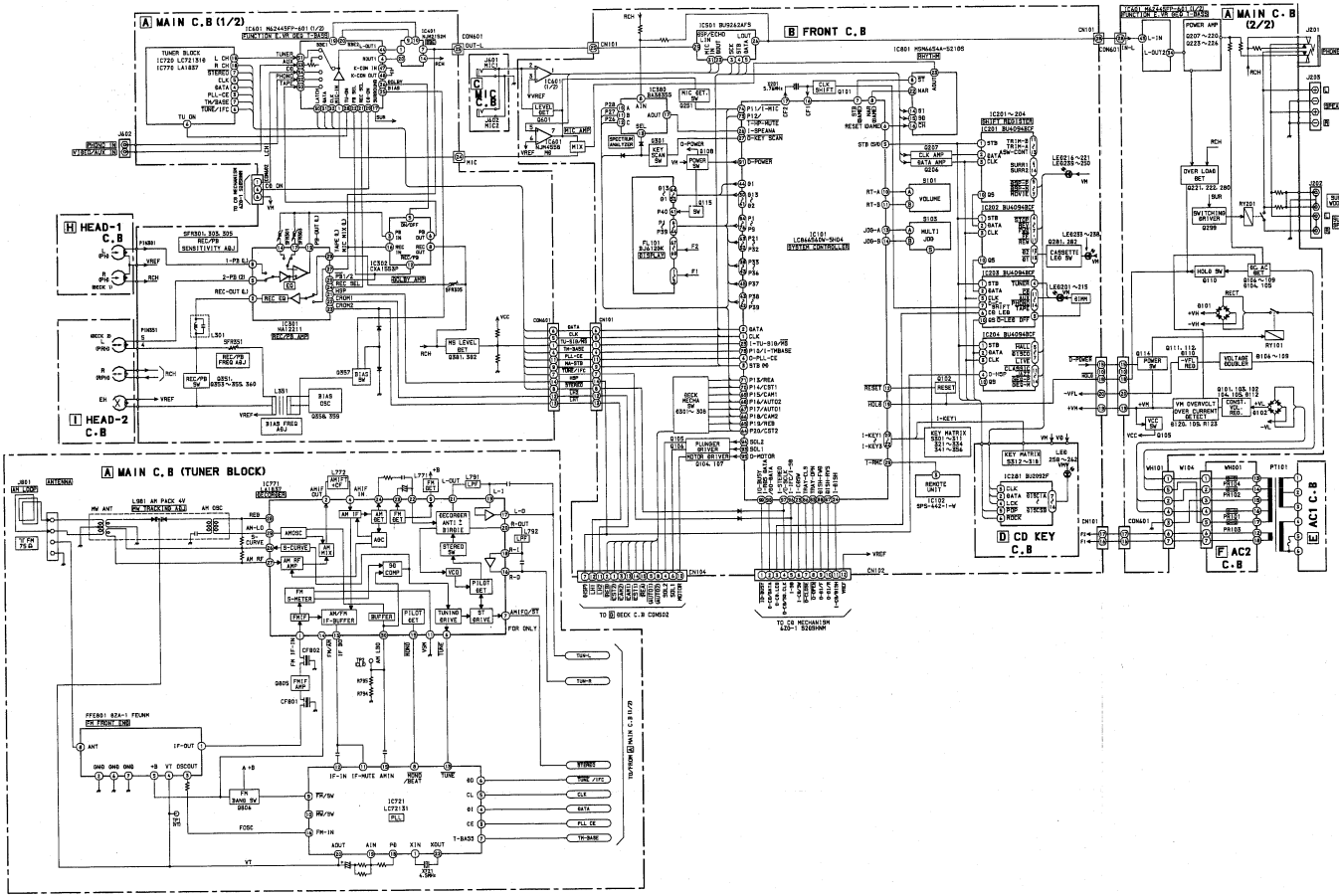
E C B

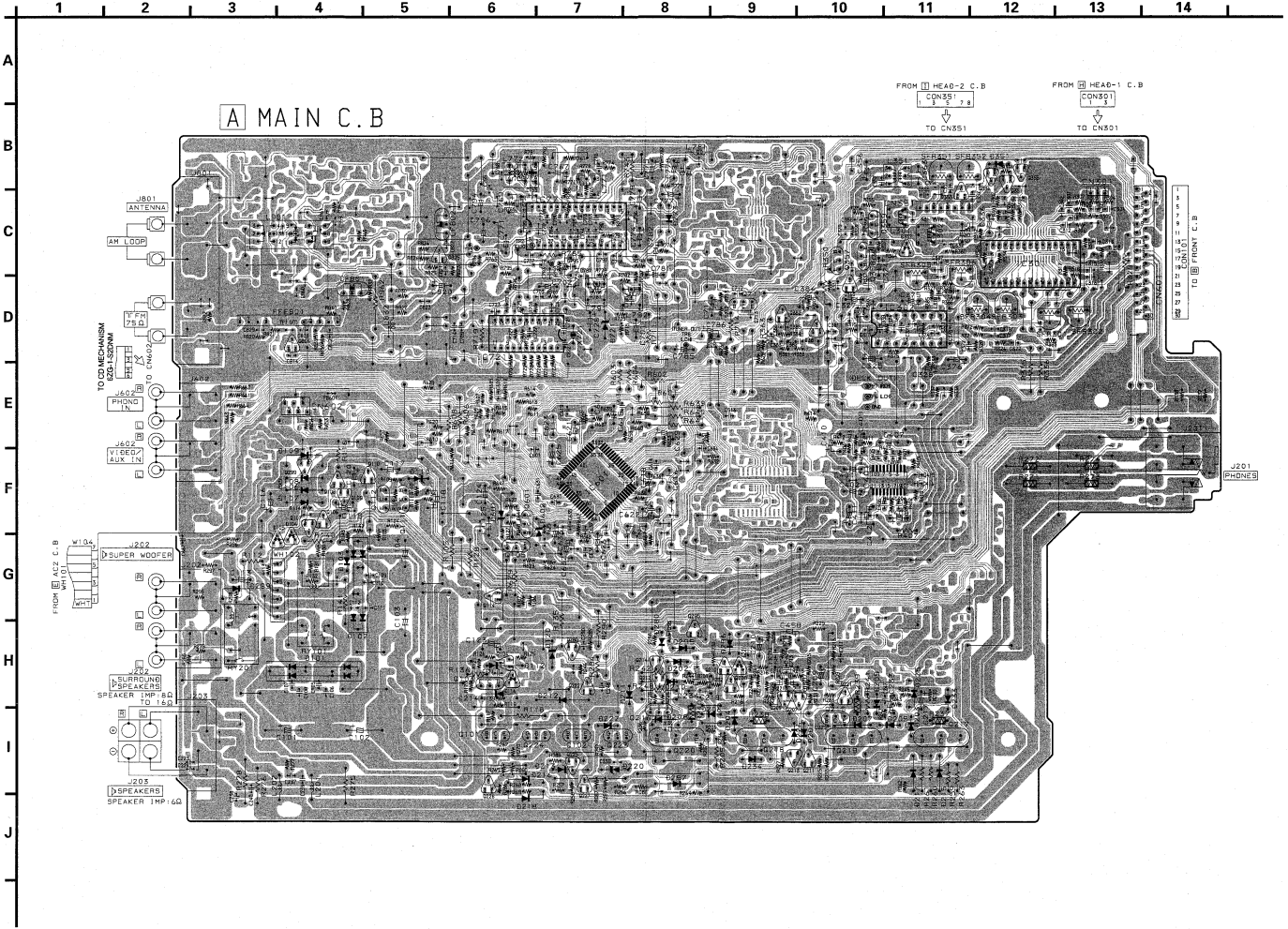
2SA933S

RT1N141C　CSA1362GR
2SA1235　RT1P441C
2SC3052　DTA144EK
RT1P144C　DTA114WK
CMBT5551　CMBT5401
2SC2714　RT1N144C
DTA123JK　RT1P141C

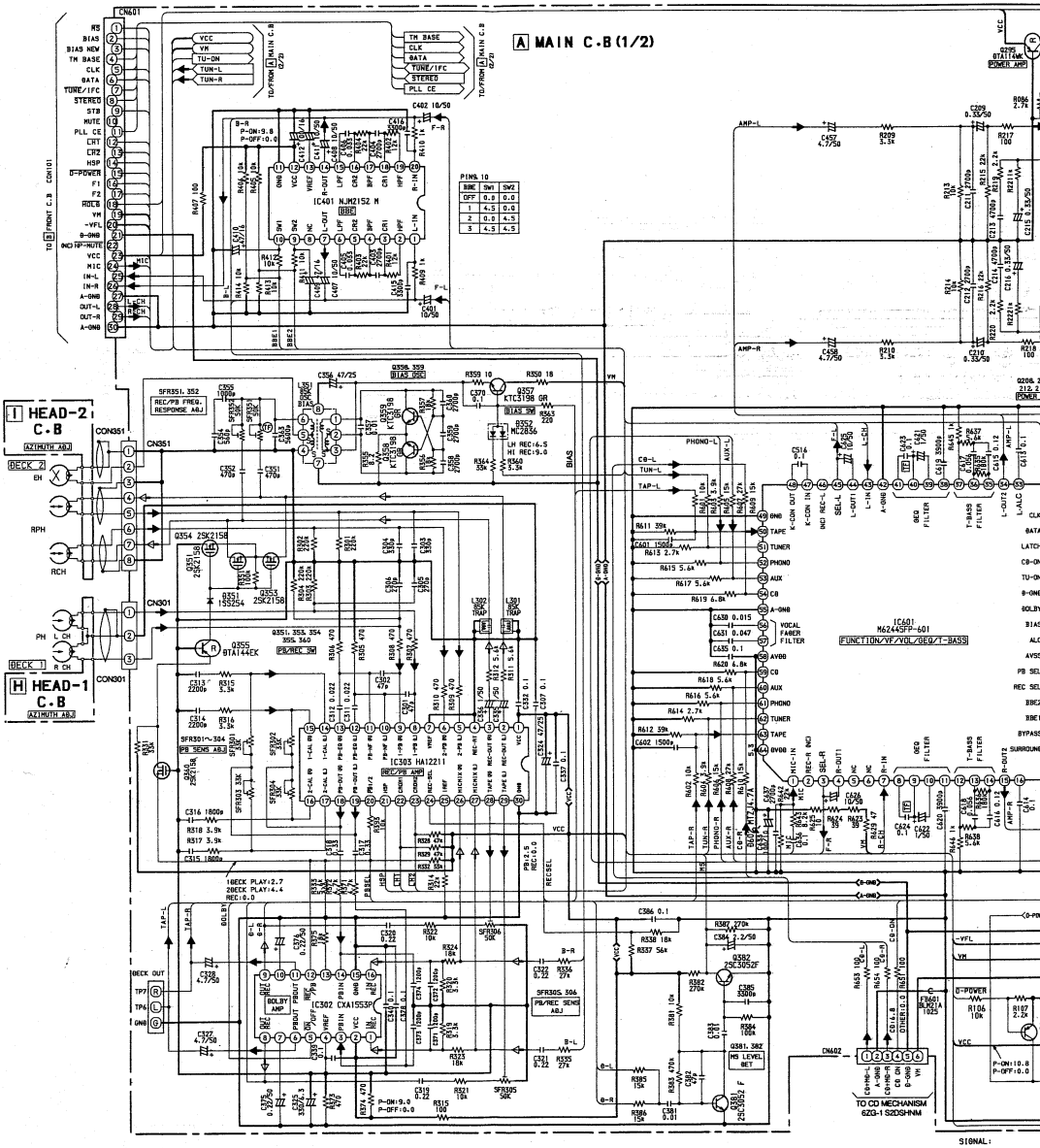
2SK2158

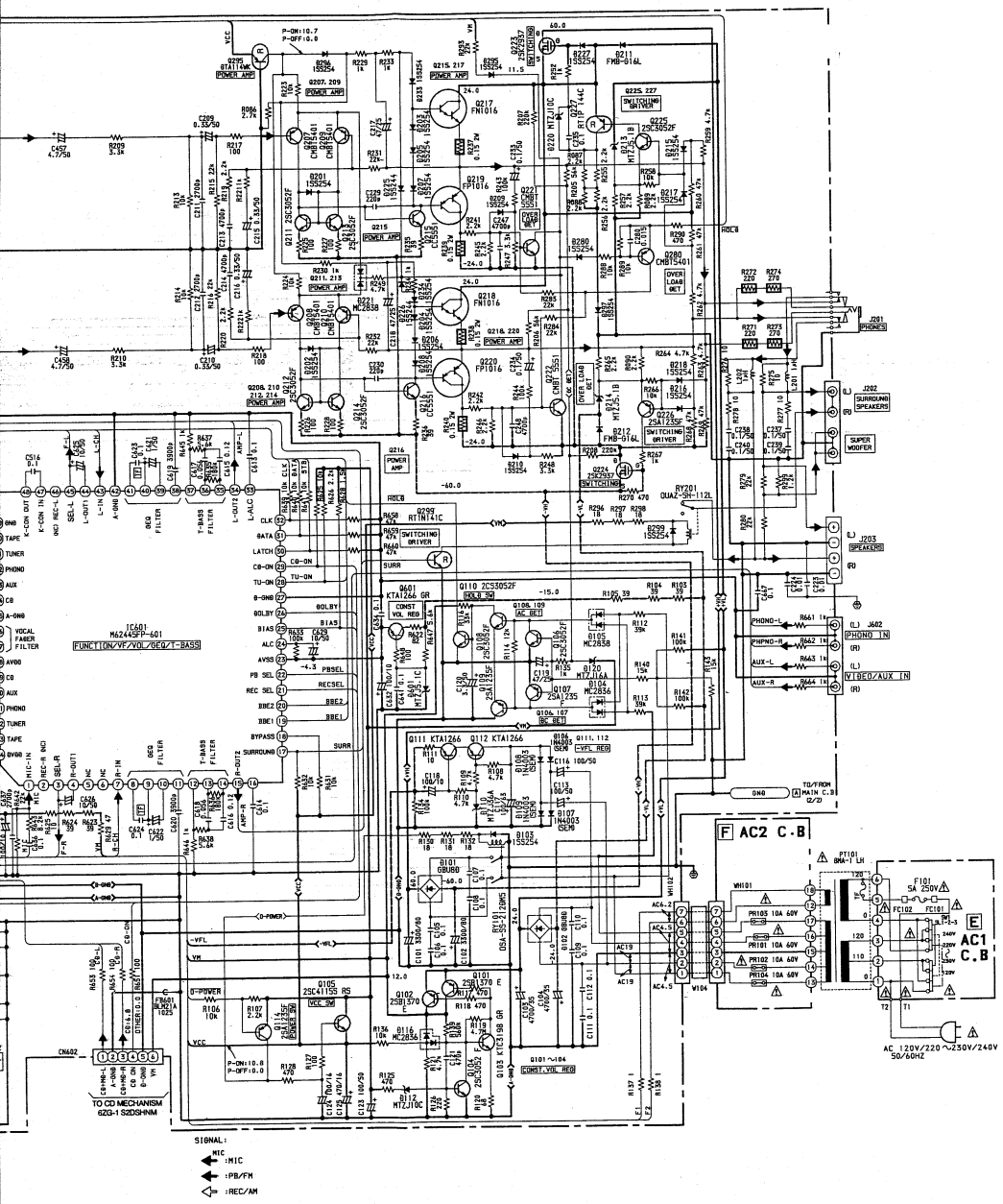
BLOCK DIAGRAM (MAIN / FRONT)



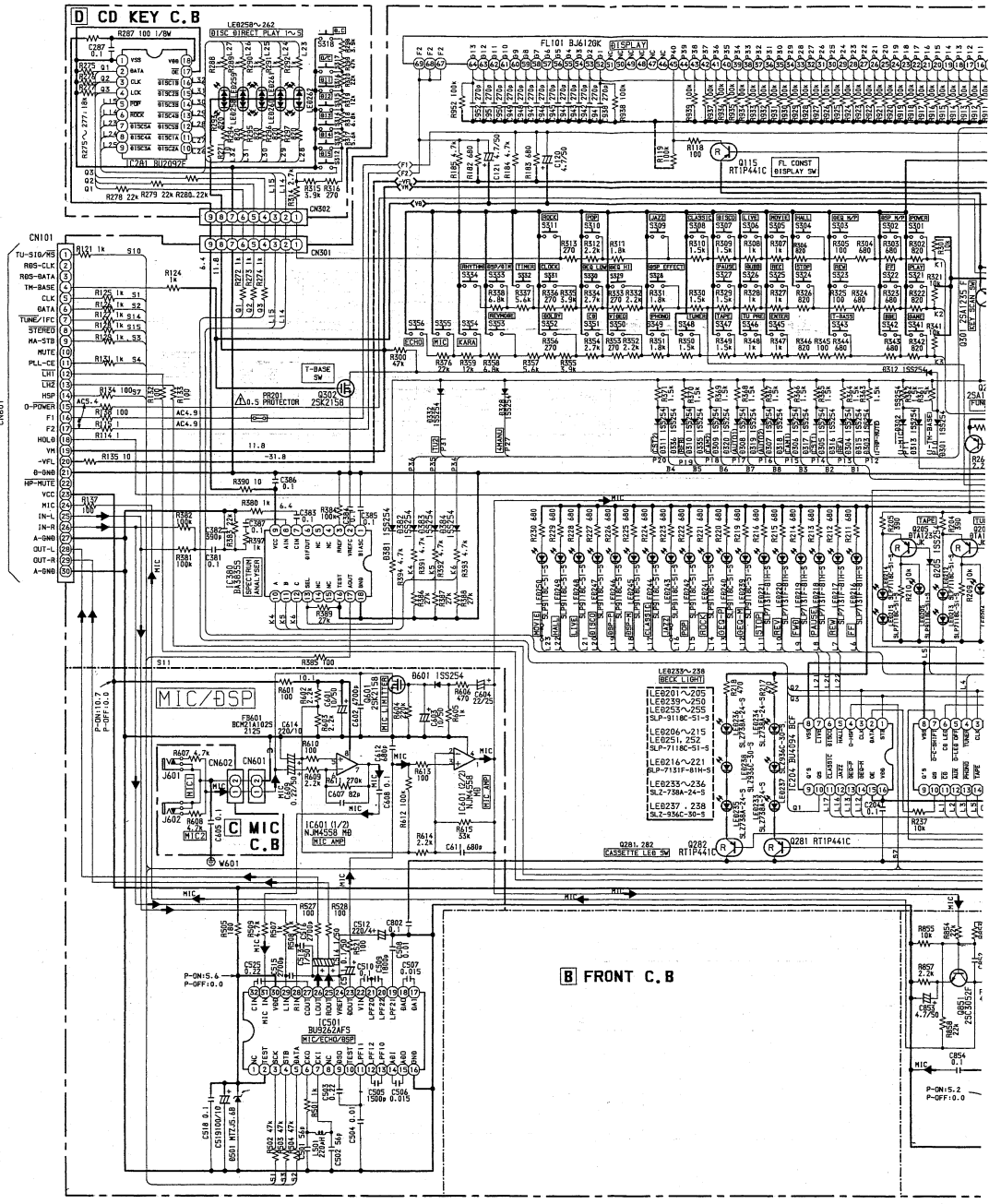

A MAIN C.B
FROM H HEAD-2 C.B
CON351
TO CN351
FROM H HEAD-1 C.B
CON301
TO CN301
J801
ANTENNA
AM LOOP
FM 75Ω
J602
PHONO IN
J601
VIDEO/ AUX IN
J202
SUPER WOOFER
SURROUND SPEAKERS
SPEAKER IMP: 8Ω TO 16Ω
J203
SPEAKERS
SPEAKER IMP: 6Ω
J201
PHONES
TO B FRONT C.B
FROM B ACC C.B

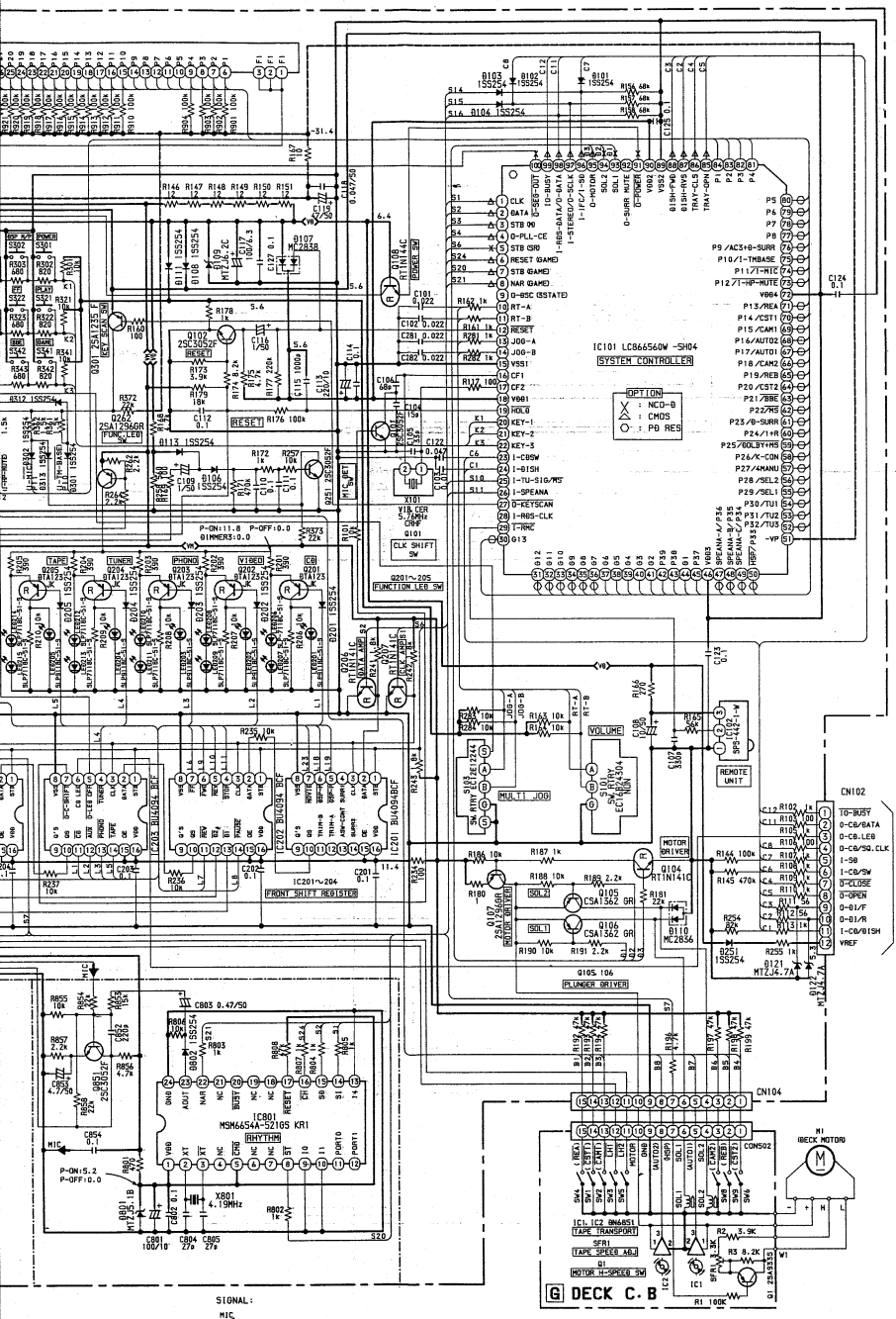
SCHEMATIC DIAGRAM – 1 (MAIN 1 / 2)

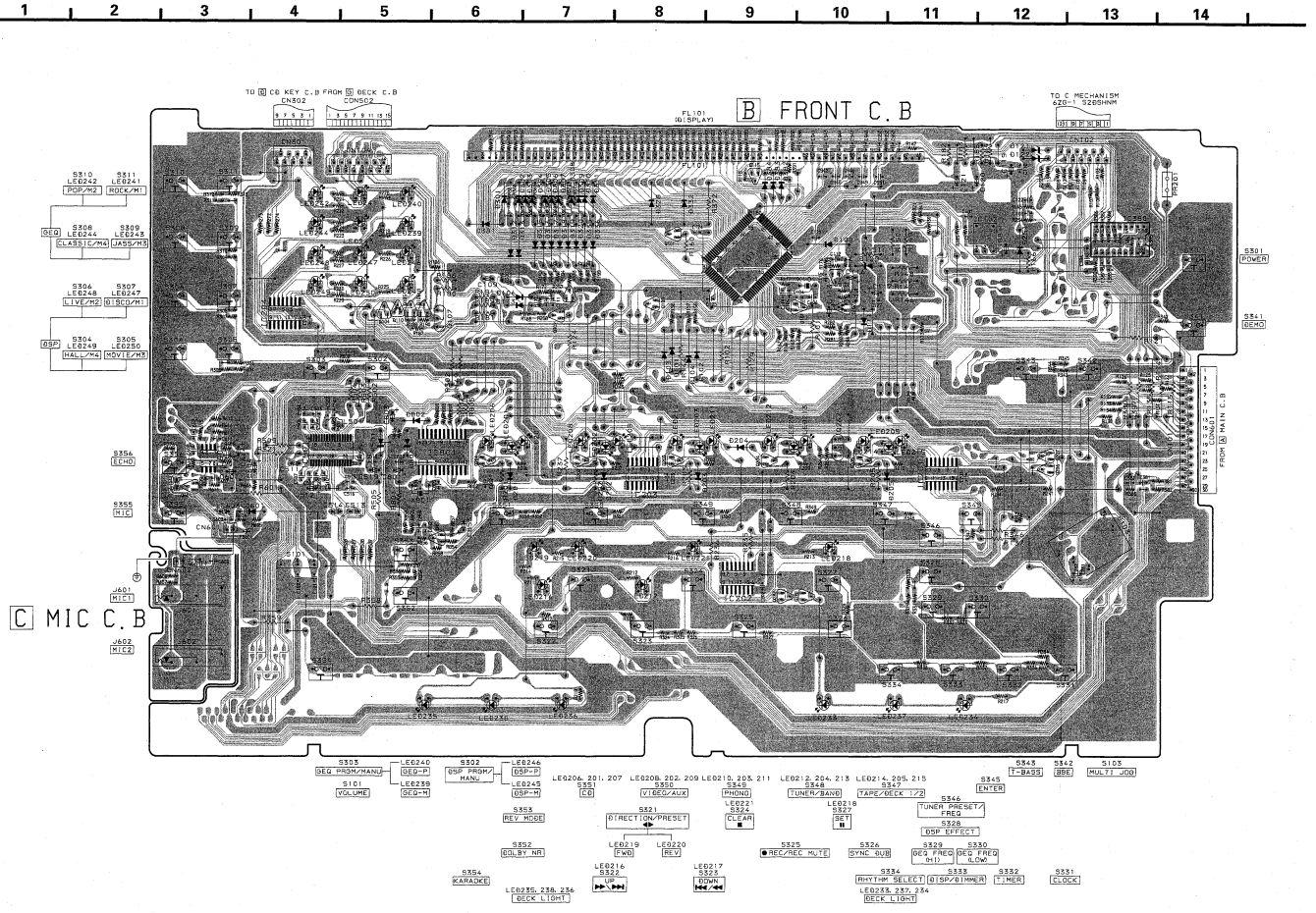



F AC2 C.B
AC1 C.B
TO CD MECHANISM 6ZG-1 S2DSHNM
SIGNAL:
:MIC
:PB/FM
:REC/AM
AC VOLTAGE
240V
220V~230V
120V
AC 120V/220~230V/240V 50/60HZ

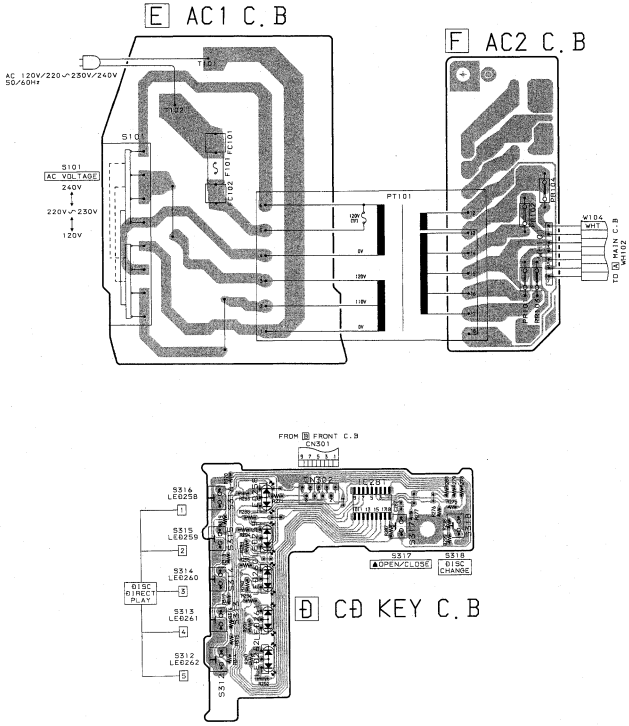
SCHEMATIC DIAGRAM – 2 (FRONT / CD KEY)



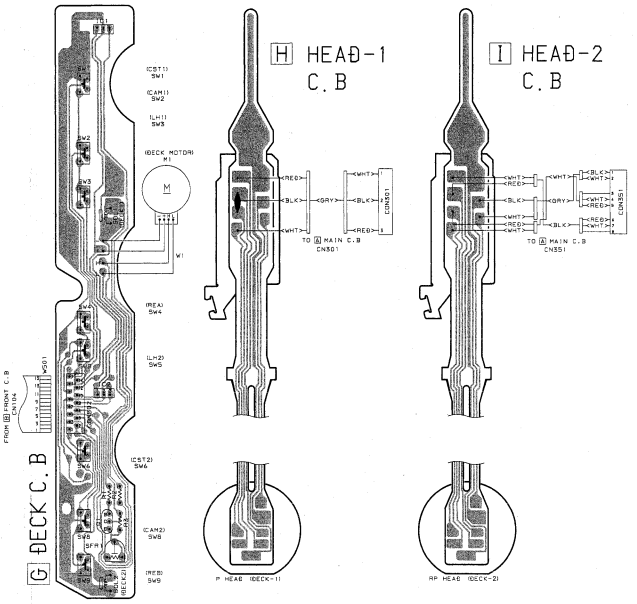

IC101 LC866560W -5H04
SYSTEM CONTROLLER
OPTION
: NCO-B
: CMOS
: PB RES
IC201~204
FRONT SHIFT REGISTER
IC801
MSM6654A-521GS KR1
RHYTHM
Q105 106
PLUNGER DRIVER
MOTOR DRIVER
VOLUME
REMOTE UNIT
MULTI JOG
CN102
CN104
CONS02
M1
(DECK MOTOR)
IC1, IC2 BN6851
TAPE TRANSPORT
SFR1
TAPE SPEED ADJ
Q1
MOTOR H-SPEED SW
G DECK C.B
SIGNAL:
MIC
:MIC
:PB

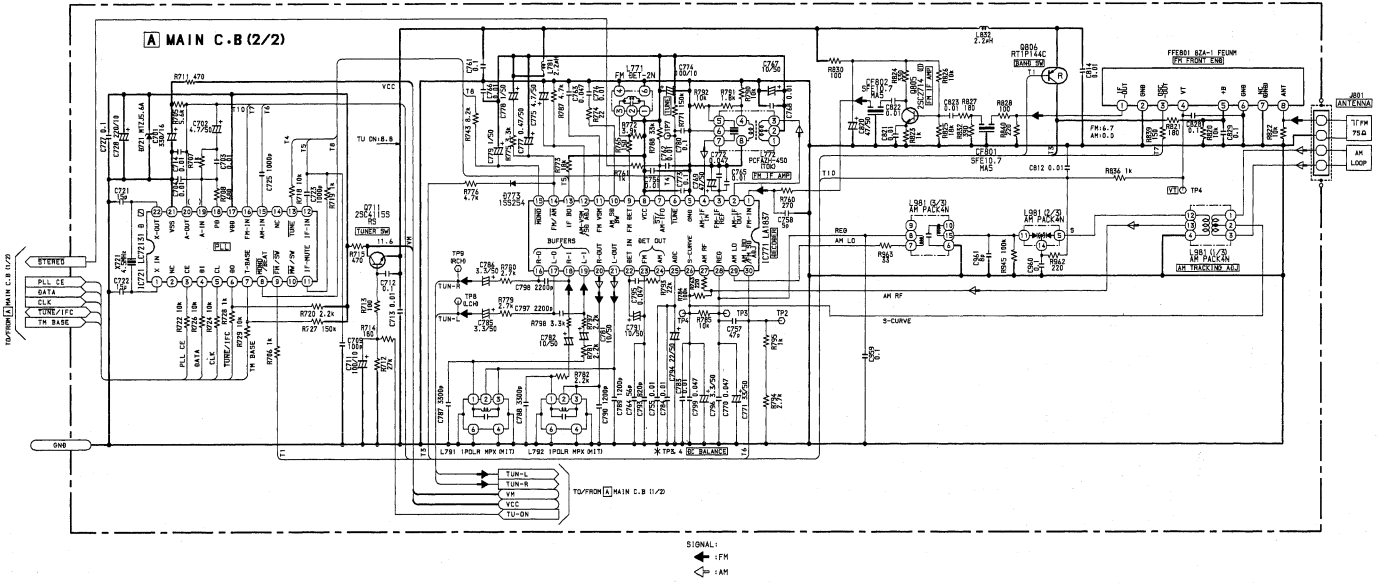

B FRONT C.B
C MIC C.B
TO B CD KEY C.B FROM D DECK C.B
CN302
CN502
TO C MECHANISM
620-1 32SHNM
CN102
FL101
(DISPLAY)
S310
LED242
POP/M2
S311
LED241
ROCK/M1
S308
LED244
CLASSIC/M4
S309
LED243
JASS/M3
S304
LED248
LIVE/M2
S307
LED247
DISCO/M1
S305
LED250
MOVIE/M5
S304
LED249
HALL/M4
S354
ECHO
S355
MIC
J601
MIC1
J602
MIC2
S301
POWER
S841
DEMO
FROM A MAIN C.B
S303
SEQ PRGM/MANU
S101
VOLUME
LED240
SEQ-P
LED256
SEQ-M
S302
DSP PRGM/MANU
LED246
DSP-P
LED245
DSP-M
LED206, 201, 207
S351
CD
LED208, 202, 209
S350
VIDEO/AUX
LED210, 205, 211
S349
PHONO
LED212, 204, 213
S348
TUNER/BAND
LED214, 205, 215
S347
TAPE/DECK 1/2
S345
ENTER
S343
T-BASS
S342
BBE
S103
MULTI JOG
S346
TUNER PRESET/FREQ
S328
DSP EFFECT
S353
REV MODE
S352
DOLBY NR
S321
DIRECTION/PRESET
LED221
S324
CLEAR
LED218
S327
SET
LED219
FWD
LED220
REV
S325
REC/REC MUTE
S326
SYNC DUB
S329
DEQ FREQ (HI)
S330
DEQ FREQ (LOW)
S354
KARAOKE
LED216
S322
LED217
S323
DOWN
LED235, 236, 236
DECK LIGHT
S334
RHYTHM SELECT
S333
DISP/01MMER
S332
TIMER
S331
CLOCK
LED233, 237, 234
DECK LIGHT

WIRING – 3 (AC / CD KEY)

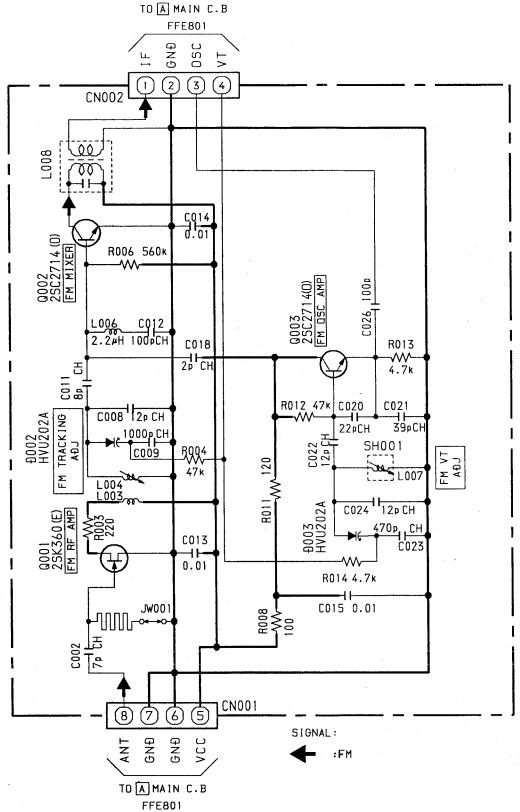


WIRING – 4 (DECK)



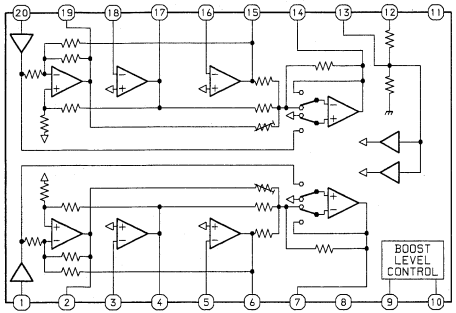

A MAIN C.B (2/2)
STEREO
PLL CE
DATA
CLK
TUNE/IFC
TM BASE
GND
VCC
TU ON:8.8
TUNER PW
IC721 LA1151 B
IC771 LA1837
IC791 PCF8582C-450
T10
T9
T8
T7
T6
T5
T4
T3
T2
T1
L791 IPOLR MPX (H17)
L792 IPOLR MPX (H17)
TPS 4 DC BALANCE
TUN-L
TUN-R
VM
VCC
TU-ON
TO/FROM A MAIN C.B II/2
BUFFERS
BET OUT
S-CURVE
AM RF
AM LO
FM IF AMP
FM FRONT END
AM PACK4N
AM TRACKING ADJ
ANTENNA
1F FM 75Ω
AM LOOP
SIGNAL:
: FM
: AM

SCHEMATIC DIAGRAM – 4 (TUNER FRONT END)

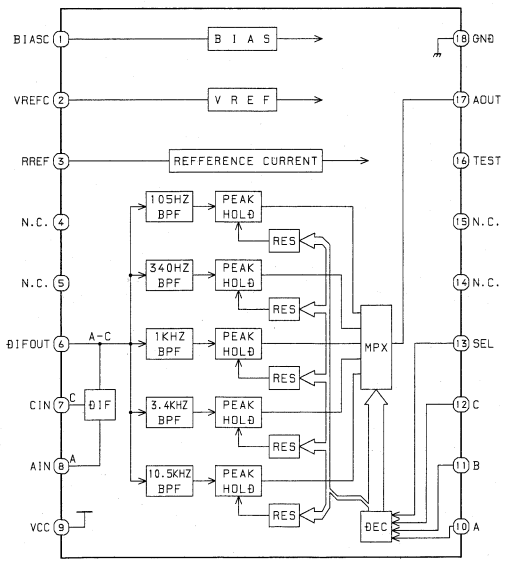


IC BLOCK DIAGRAM

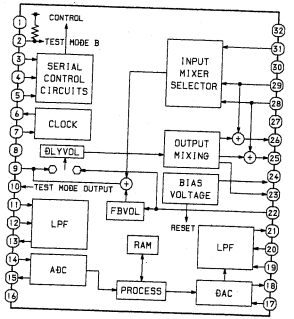
IC, NJM2152M



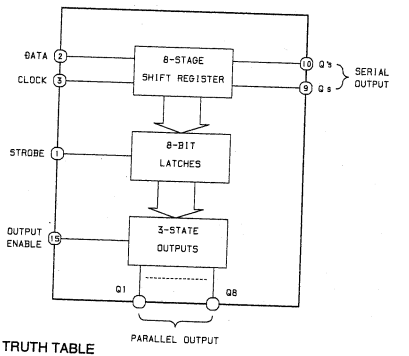
IC, BA3835S



IC, BU9262AFS



IC, BU4094BCF



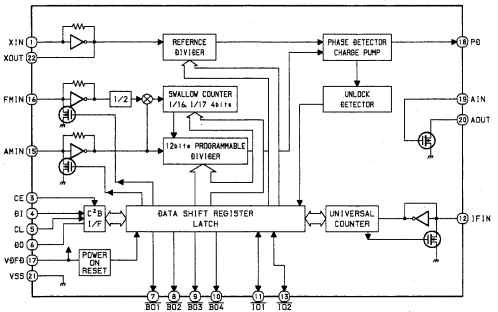
TRUTH TABLE

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
↓	L	X	X	Z	Z	Q7	NO Chg.
↑	L	X	X	Z	Z	No Chg.	Qs
↓	H	L	X	No Chg.	No Chg.	Q7	No Chg.
↓	H	H	L	L	Qn-1	Q7	No Chg.
↓	H	H	H	H	Qn-1	Q7	No Chg.
↑	H	X	X	No Chg.	No Chg.	No Chg.	Qs

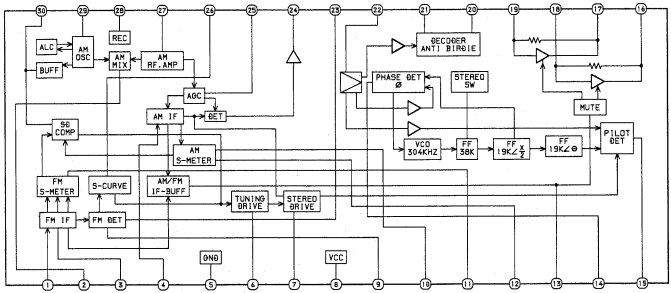
Z=High Impedance

X=Don't Care

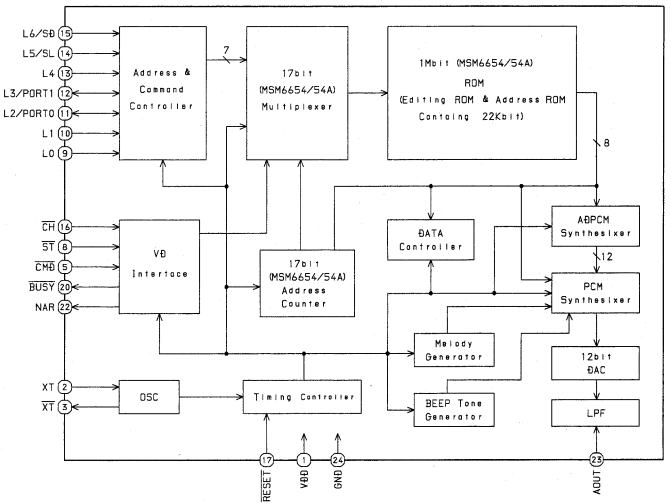
IC, LC72131D



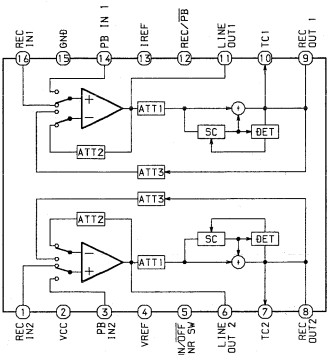
IC, LA1837



IC, MSM6654A

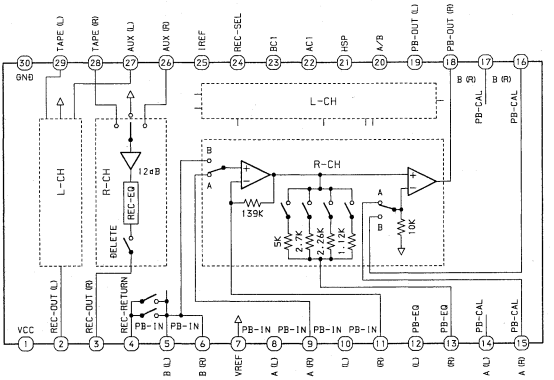


IC, CXA1553P

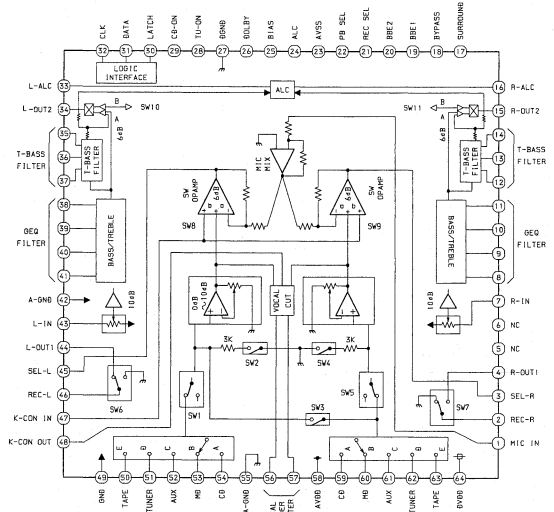


ATT:Attenuator
SC:Side Chain
DET:Detector

IC, HA12211

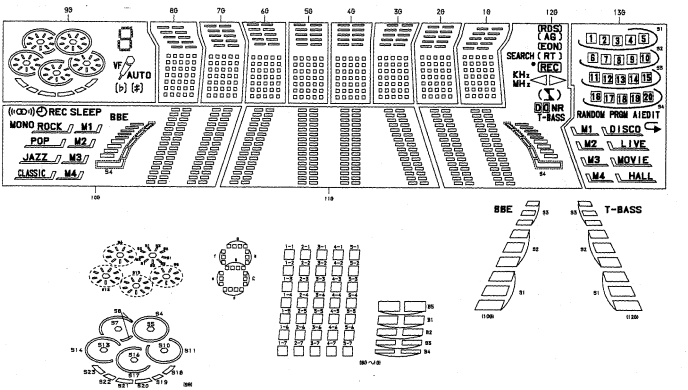


IC, M62445FP-601



FL (BJ612GK) GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



ANODE CONNECTION

	130	120	110	100	90	10 / 80
P1	S1	SEARCH	-	-	-	B4
P2	S2	RDS AG EON	-	-	-	B3
P3	S3	RT	-	-	-	B2
P4	S4	-	-	((( )))	S23	B1
P5	DISCO LIVE HALL MOVIE	(RDS)	-	MONO	S22	1-1
P6	MOVIE	(AG)	-	ROCK POP CLASSIC JAZZ	S21	2-1
P7	HALL	(EON)	-	JAZZ	S20	3-1
P8	LIVE	(RT)	B1	CLASSIC	S19	4-1
P9	DISCO		B9	POP	S18	5-1
P10	M1 M2 M3 M4	B1	B17	B1	S16	1-2
P11	M4	B9	B25	B9	S15	2-2
P12	M3		B2	ROCK	S17	3-2
P13	M2		B10	M1 M2 M3 M4	S13	4-2
P14	M1	B2	B18	B2	S12	5-2
P15		B10	B26	B10	S14	1-3
P16	EDIT		B3	M4	S10	2-3
P17	AI		B11	M3	S9	3-3
P18	PRGM	B5	B19	B3	S11	4-3
P19	RANDOM	B11	B27	B11	S7	5-3
P20	1	DOLBY NR	B4	M2	S6	1-4

	130	120		100	90	10 / 80
P21	2	REC	B12	M1	S8	2-4
P22	3	B4	B20	B4	S5	3-4
P23	4	B12	B28	B12	S2	4-4
P24	5		B5	REC	S3	5-4
P25	6	KHz	B13		S1	1-5
P26	7	B5	B21	B5	S4	2-5
P27	8	B13	B29	B13	a	3-5
P28	9	MHz	B6	SLEEP	e	4-5
P29	10	S4	B14	S4	c	5-5
P30	11	B6	B22	B6	g	1-6
P31	12	B14	B30	B14	f	2-6
P32	13	T-BASS	B7	BBE	b	3-6
P33	14	S1	B15	S1	d	4-6
P34	15	B7	B23	B7	VF	5-6
P35	16	B15	B31	B15		1-7
P36	17	S2	B8	S2	AUTO	2-7
P37	18	S3	B16	S3	(♭)	3-7
P38	19	B8	B24	B8	(♯)	4-7
P39	20	B16	B32	B16	♭ ♯	5-7
P40	-	S5	B5	S5	-	B5

IC DESCRIPTION

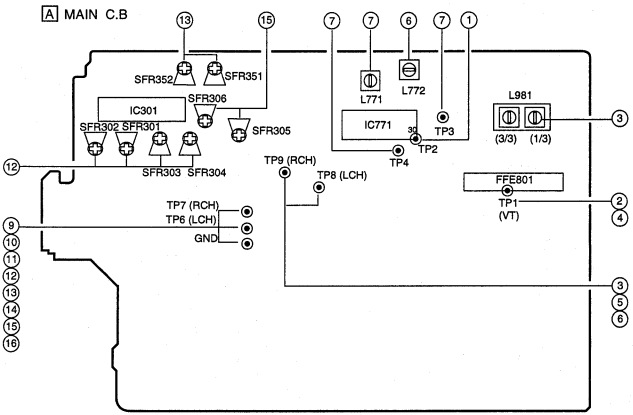
IC, LC866560W-5H04

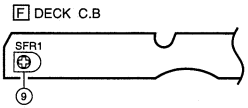
Pin No.	Pin Name	I/O	Description
1	CLK	O	All serial ICs clock output.
2	DATA	O	All serial ICs data output.
3	STB (M)	O	Main C.B IC data latch strobe output.
4	O-PLL-CE	O	PLL IC (LC7213D) chip enable output.
5	STB (SR)	O	Shift register data latch strobe output.
6	RESET (GAME)	I	Reset input.
7	STB (GAME)	O	Rhythm IC data latch strobe output.
8	NAR (GAME)	I	Rhythm IC NAR input.
9	O-DSC (3STATE)	O	Serial data output for Prologic C.B.(Not connected.)
10	RT-A	I	Rotary encorder volume A input.
11	RT-B	I	Rotary encorder volume B input.
12	$\overline{\text{RESET}}$	I	Reset input.
13	JOG-A	I	Rotary encorder multi jog A input.
14	JOG-B	I	Rotary encorder multi jog B input.
15	VSS 1	–	GND.
16	CF 1	–	5.76MHz oscillator circuit.
17	CF 2	–	
18	VDD 1	–	Power supply input.
19	$\overline{\text{HOLD}}$	I	Power failure detected input "1" to stop clock and main memory.
20	KEY-1	I	KEY input 1~3.(A/D)
21	KEY-2		
22	KEY-3		
23	I-CD SW	I	CD mechanical switch A/D converter input.
24	I-DISH	I	CD turntable photo sensor A/D converter input.
25	I-TU-SIG/$\overline{\text{MS}}$	I	Tuner signal and deck music sensor signal input.
26	I-SPEANA	I	A/D input for spectrum analyzer display.
27	O-$\overline{\text{KEYSCAN}}$	O	Key scan timing output.
28	I-RDS-CLK	I	Tuner RDS clock input.(Not connected.)
29	I-$\overline{\text{RMC}}$	I	System remote control signal input.
30~41	G13~G2	O	FL grid G13~G2 output .
42,43	P39~P38	O	FL Segment P39,P38 output .
44	G1	O	FL grid G1 output.
45	P31	–	FL Segment P26 output.
46	VDD3	–	Power supply input.
47	SPEANA-A/P36	I/O	Spectrum analyzer band pass filter control A / FL segment P36 output.
48	SPEANA-B/P35	I/O	Spectrum analyzer band pass filter control B / FL segment P35 output.
49	SPEANA-C/P34	I/O	Spectrum analyzer band pass filter control C / FL segment P34 output.
50	$\overline{\text{HSP}}$/P33	I/O	$\overline{\text{HSP}}$ diode detect input / FL segment P33 output.
51	-VP	–	Power supply input for FL display.
52	P32/TU3	I/O	FL segment P32 output / Tuner band select 3 input.
53	P31/TU2	I/O	FL segment P31 output / Tuner band select 2 input.
54	P30/TU1	I/O	FL segment P30 output / Tuner band select 1 input.

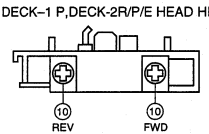
Pin No.	Pin Name	I/O	Description
55	P29/SEL1	I/O	FL segment P29 output / SEL1 diode detect input.
56	P28/SEL2	I/O	FL segment P28 output / SEL2 diode detect input.
57	P27/4MANU	I/O	FL segment P27 output / 4MANU diode detect input.
58	P26/K-CON	I/O	FL segment P26 output / K-CON diode detect input.
59	P25/DOLBY+MS	I/O	FL segment P25 output / DOLBY+MS diode detect input.
60	P24/1+R	I/O	FL segment P24 output / 1+R diode detect input.
61	P23/D-SURR	I/O	FL segment P23 output / D-SURR diode detect input.
62	P22/MS	I/O	FL segment P22 output / MS diode detect input.
63	P21/BBE	I/O	FL segment P21 output / BBE diode detect input.
64	P20/CST 2	I/O	FL segment P20 output / DECK2 cassette detect switch input.
65	P19/REB	I/O	FL segment P19 output / DECK2 side-B record OK switch input.
66	P18/CAM 2	I/O	FL segment P18 output / DECK2 cam switch input.
67	P17/AUTO 1	I/O	FL segment P17 output / DECK1 auto stop signal input.
68	P16/AUTO 2	I/O	FL segment P16 output / DECK2 auto stop signal input.
69	P15/CAM 1	I/O	FL segment P15 output / DECK1 cam switch input.
70	P14/CST 1	I/O	FL segment P14 output / DECK1 cassette detect switch input.
71	P13/REA	I/O	FL segment P13 output / DECK2 side A record OK switch input.
72	VDD 4	–	Power supply input.
73	P12/I-HP-MUTE	I/O	FL segment P12 output / "L" input prologic DSP off.
74	P11/I-MIC	I/O	FL segment P11 output / Microphone infor. for auto vocal fader ON/OFF.
75	P10/I-TMBASE	I/O	FL segment P10 output / Reference clock input for timer watch.
76	P9/AC3+D-SURR	I/O	FL segment P9 output / AC3 +D-SURR diode detect input.
77~84	P8~P1	O	FL segment P8~P1 output.
85	TRAY-OPN	O	CD tray open data output.
86	TRAY-CLS	O	CD tray close data output.
87	DISH-RVS	O	CD turntable reverse rotation output.
88	DISH-FWD	O	CD turntable forward rotation output.
89	VSS2	–	GND.
90	VDD2	–	Power supply input.
91	O-POWER	O	System power supply ON /OFF output.
92	O-SURR MUTE	O	Surround mute output.(Not connected.)
93	SOL1	O	Deck1 solenoid output.
94	SOL2	O	Deck2 solenoid output.
95	O-MOTOR	O	Deck motor output.
96	I-IFC/I-SD	I	Tuner SD detect input / Tuner IF count serial data input.
97	I-STEREO/O-SCLK	I/O	Clock output for CD SUB-Q data / Tuner stereo data input.
98	I-RDS-DA/O-DA	I/O	Clock control data output / Tuner RDS data input.
99	IO-BUSY	I/O	CD IC data input/output.
100	O-SEQ-OUT	O	FL segment control data output.

IC, LC72131

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>X IN</td><td rowspan="2">I/O</td><td rowspan="2">A crystal oscillator (4.5MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>X-OUT</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (LC866560W-5H04) when relevant key is operated. Active "H".</td></tr>
<tr><td>5</td><td>CL</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (LC866560W-5H04).</td></tr>
<tr><td>7</td><td>TM-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when $\overline{\text{MONO}}$ / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / AM</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><th>AM</th><th>FM</th><th>LW</th><th>MW</th><th>FM</th><th>MW</th><th>SW</th><th>FM</th></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><th>AM</th><th>FM</th><th>LW</th><th>MW</th><th>FM</th><th>MW</th><th>SW</th><th>FM</th></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IF-IN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>AM-IN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>FM-IN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>A-IN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>A-OUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>







< TUNER SECTION >

1. Clock Check
   Settings : • Test point : TP2
   Method : Set to AM 1710kHz and check that the test point is 2160kHz ± 45Hz.

2. AM VT Check
   Settings : • Test point : TP1
   Method : Set to AM 1710kHz and AM 530kHz and check that the test point is less than 8.5V(1710kHz) and more than 0.6V(530kHz).

3. AM Tracking Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location :
   L981(1/3) 1000kHz
   Method : The level at 1000kHz is adjusted to MAX by L981(1/3).

4. FM VT Check
   Settings : • Test point : TP1
   Method : Set to FM 108.0MHz and check that the test point is less than 8.0V.
   Set to FM 87.5MHz and check that the test point is more than 0.5V.

5. FM Tracking Check
Settings : • Test point : TP8(Lch), TP9(Rch)
Method : • Set to FM 98.0MHz and check that the test point is less than 9.0dB.

6. AM IF Adjustment
Settings : • Test point : TP8(Lch), TP9(Rch)
• Adjustment location :
L772 ..... 450kHz

7. DC Balance / Mono Distortion Adjustment
Settings : • Test point : TP3, TP4
• Adjustment location : L771
• Input level : 54dB
Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V.
Next, check that the distortion is less than 1.3%

8. Auto Stop Level Check
AM
Settings : • Input level : 52dB
Method : Set to AM 1000kHz and check that the auto stop is at 37 ~ 62dB.

FM
Settings : • Input level : 25dB
Method : Set to FM 98.0MHz and check that the auto stop is at 25dB ± 10dB.

< DECK SECTION >

9. Tape Speed Adjustment
Settings : • Test tape : TTA–100
• Test point : TP6(Lch), TP7(Rch)
• Adjustment location : SFR1
Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz ± 5Hz.

10. Head Azimuth Adjustment
Settings : • Test tape : TTA–300
• Test point : TP6(Lch), TP7(Rch)
• Adjustment location : Head azimuth adjustment screw
Method : Play back (FWD) the 10kHz signal of the test tape and adjust screw so that the output becomes maximum.
Next, perform on REV PLAY mode.

11. PB Frequency Response Check (DECK 1, DECK 2)
Settings : • Test tape : TTA–300
• Test point :TP6(Lch), TP7(Rch)
Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is within 2dB.

12. PB Sensitivity Adjustment (DECK 1, DECK 2)
Settings : • Test tape : TTA–200
• Test point : TP6(Lch), TP7(Rch)
• Adjustment Location : SFR301 (DECK1,Lch)
SFR302 (DECK1,Rch)
SFR303 (DECK2,Lch)
SFR304 (DECK2,Rch)
Method : Play back the test tape and adjust SFRs so that the output level at TP6,TP7 becomes 245mV± 10mV.

13. REC/PB Frequency Response Adjustment
Settings : • Test tape : TTA–602
• Test point : TP6(Lch), TP7(Rch)
• Input signal : 1kHz / 10kHz (LINE IN)
• Adjustment location : SFR351 (Lch)
SFR352 (Rch)
Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 17mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 0dB ± 0.5dB with respect to that of the 1kHz signal.

14. REC/PB Frequency Response Check
Settings : • Test tape : TTA–615
• Test point : TP6(Lch), TP7(Rch)
• Input signal : 1kHz / 10kHz (LINE IN)
Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 17mV. Record and play back the 1kHz and 10kHz signals and check that the output is 0dB ± 2dB.

15. REC/PB Sensitivity Adjustment
Settings : • Test tape : TTA–602
• Test point : TP6(Lch), TP7(Rch)
• Input signal : 1kHz (LINE IN)
• Adjustment location : SFR305 (Lch)
SFR306 (Rch)
Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 170mV. Record and play back the 1kHz signals and adjust SFRs so that the output of the 1kHz signals becomes 0 ± 0.5dB.

16. REC/PB Sensitivity Check
Settings : • Test tape : TTA–602
• Test point : TP6(Lch), TP7(Rch)
• Input signal : 1kHz (LINE IN)
Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 170mV. Record and play back the 1kHz signals and check that the output is 0 ± 1.5dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :	Less than 10 / 9 / 9dB
(THD 3%)	[at 87.5 / 98.0 / 108.0MHz]
S/N 50dB Quieting sensitivity :	
	Less than 35dB
	[at 98.0MHz]
Signal to noise ratio :	Mono : More than 68dB
	Stereo : More than 66dB
	[at 98.0MHz]
Distortion :	Mono : Less than 1.2%
	Stereo : Less than 2.0%
	[at 98.0MHz]
Auto stop level :	25dB ± 10dB [at 98.0MHz]
Stereo separation :	More than 30dB [at 98.0MHz]
Intermediate frequency :	10.7MHz

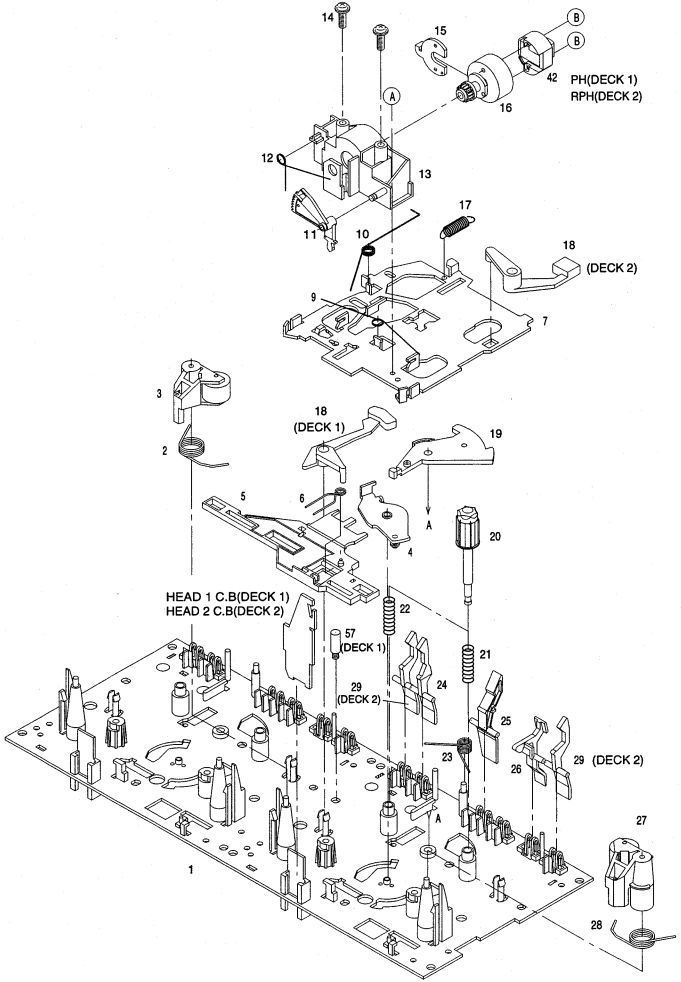
<AM SECTION>

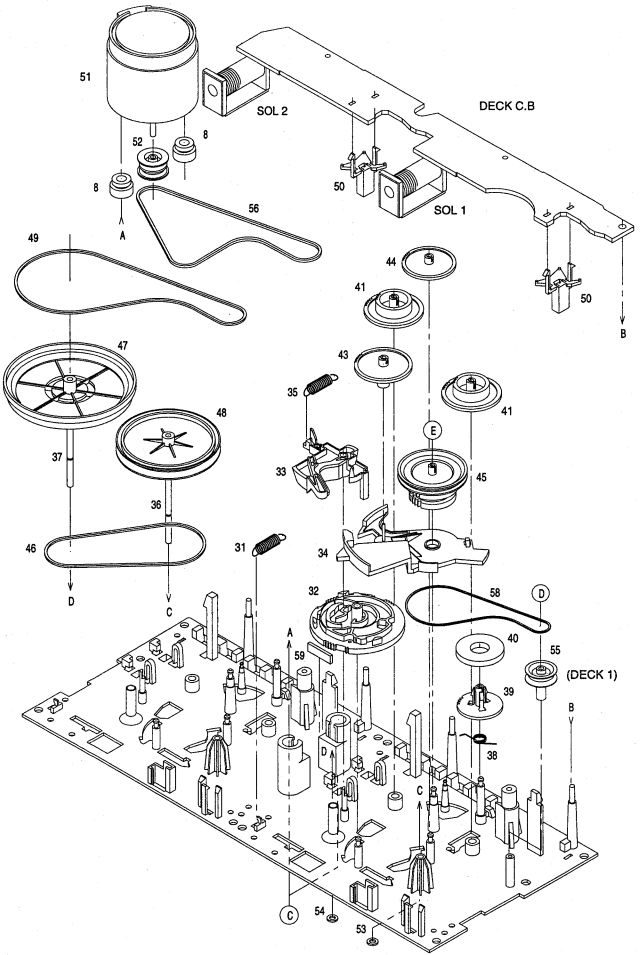
Sensitivity :	Less than 60dB
(S/N 20 dB)	[at 600kHz]
	Less than 58dB
	[at 1000kHz]
	Less than 58dB
	[at 1400kHz]
Signal to noise ratio :	Mono : More than 36dB
	Stereo : More than 34dB
	[at 1000kHz]
Distortion :	Mono : Less than 1.5%
	Stereo : Less than 4.0%
	[at 1000kHz]
Stereo separation :	More than 15dB [at 1000kHz]
Auto stop level :	52dB +10/-15dB
	[at 1000kHz]
Intermediate frequency :	450kHz

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.21%
	(W.R.M.S)
Take-up torque :	30 ~ 55g-cm
	(FWD, REV)
F.F torque :	75 ~ 160g-cm
REW torque :	75 ~ 160g-cm
Back tension :	2 ~ 7g-cm
	(FWD, REV)
PB output level :	2.8V± 2dB
	(SP OUT 6Ω)
REC/PB output level :	0 ± 1dB
	(SP OUT 6Ω,NORM)
Distortion (REC/PB) :	Less than 2.0%
	(NORM,CrO2)
Noise level (PB) :	Less than 20mV
	(NORM, SP OUT 6Ω)
Noise level (REC/PB) :	Less than 20mV
	(NORM, SP OUT 6Ω)
Erasing ratio :	More than 60dB
	(at 125Hz, +10VU, NORM, CrO2)
Test tape :	TTA-602 (NORM)
	TTA-615 (CrO2)

TAPE MECHANISM EXPLODED VIEW 1 / 1

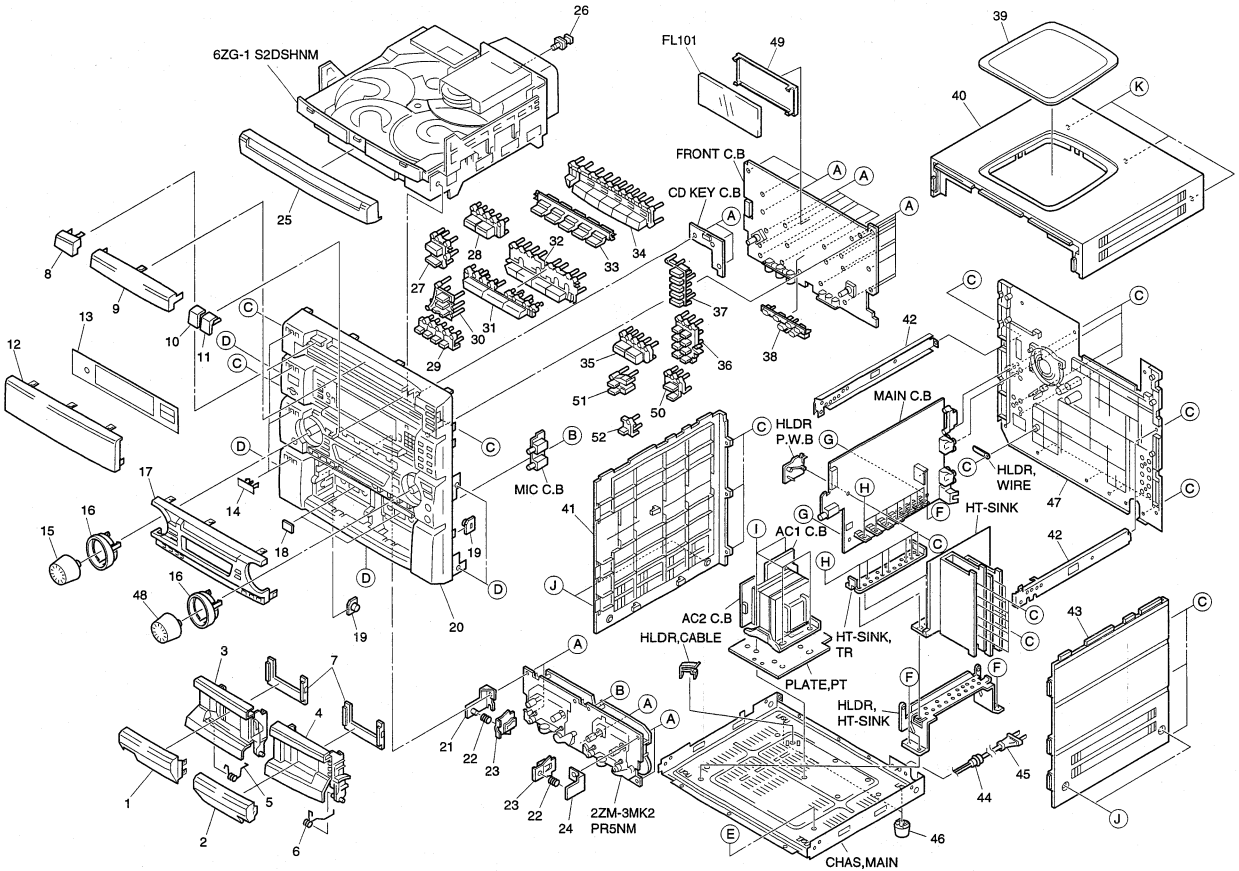




TAPE MECHANISM PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-ZM3-301-519		CHAS ASSY,M2
2	82-ZM1-258-110		SPR-T,PINCH L
3	82-ZM1-341-110		LVR ASSY,PINCH L2
4	82-ZM1-333-010		PLATE,LINK 2
5	82-ZM1-266-11K		LVR,DIR
6	82-ZM1-214-010		SPR-T,DIR
7	82-ZM1-206-81K		CHAS,HEAD
8	82-ZM3-307-019		CUSH-G,DIA3.7-8-3.2
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM1-219-119		SPR-T,LINK
11	82-ZM1-210-119		GEAR,H T
12	82-ZM1-213-019		SPR-T,HEAD
13	82-ZM1-207-619		GUIDE,TAPE
14	86-ZM4-206-010		S-SCREW,AZIMUTH
15	82-ZM1-314-119		PLATE,HEAD
16	82-ZM1-208-119		HLDR,HEAD
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM1-263-110		LVR,EJECT L (DECK 1)
18	82-ZM1-264-010		LVR,EJECT R (DECK 2)
19	82-ZM1-222-21K		LVR,PLAY
20	82-ZM1-217-319		REEL TABLE
21	82-ZM1-244-510		SPR-C,BT
22	82-ZM1-285-310		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM1-241-319		LVR,MC
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-344-110		LVR ASSY,PINCH R2
28	82-ZM1-259-110		SPR-T,PINCH R
29	82-ZM1-240-11K		LVR,REC (DECK 2)
31	82-ZM1-255-319		SPR-E,LVR DIR
32	82-ZM3-305-01K		GEAR,CAM M2
33	82-ZM1-227-21K		LVR,TRIG
34	82-ZM3-306-11K		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	82-ZM1-236-019		CAPSTAN N 2-41.5
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-31K		GEAR,REEL
42	87-A90-366-010		HEAD,PH YK50P-BP414 FPC
42	87-A90-367-010		HEAD,RPH YK56R-BP414 FPC
43	82-ZM1-225-21K		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM3-333-310		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-349-110		FLY-WHL,R W(DECK 2)
47	82-ZM3-338-110		FLY-WHL,R3 W(DECK 1)
48	82-ZM1-348-010		FLY-WHL,L W(DECK 2)
48	82-ZM1-348-010		FLY-WHL,L W(DECK 1)
49	82-ZM3-329-210		BELT,SHU R2
50	82-ZM1-245-210		HLDR,IC
51	87-045-347-019		MOT,SHU2L 70(M1)
52	82-ZM3-221-010		PULLEY,MOT 2M
53	82-ZM1-288-019		SH,1.63-3.2-0.5 SLT
54	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT
55	82-ZM3-335-210		PULLEY,COUPLER M3(DECK 1)
56	82-ZM3-337-010		BELT,SHU MOT 2
57	82-ZM3-339-010		SHAFT,COUPLER M3(DECK 1)
58	86-ZM1-206-010		BELT,MAIN L
59	82-ZM3-340-010		SH,BELT D2
A	85-ZM3-202-010		S-SCREW,TG
B	80-ZM6-207-019		V=1.6-7
C	82-ZM3-318-019		S-SCRW MOTOR M2
D	87-B10-043-010		W-P,0.99-4-0.25 SLT
E	82-ZM3-334-010		PW,2.16-6-0.4

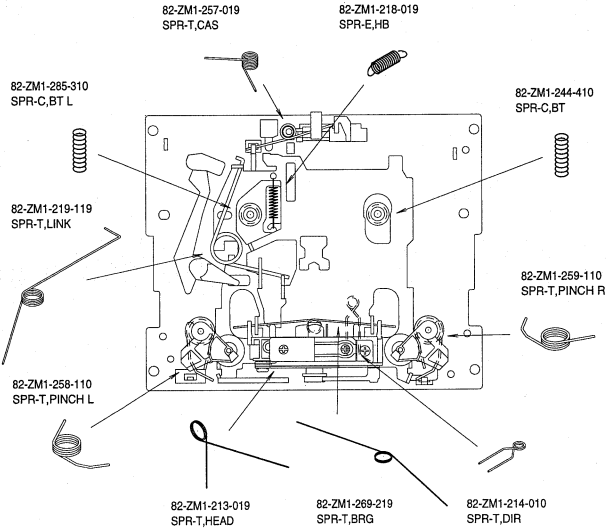

6ZG-1 S2DSHNM
FL101
FRONT C.B
CD KEY C.B
MAIN C.B
HLDR P.W.B
HLDR, WIRE
HT-SINK
AC1 C.B
AC2 C.B
HLDR,CABLE
HT-SINK, TR
PLATE,PT
HLDR, HT-SINK
MIC C.B
2ZM-3MK2 PR5NM
CHAS,MAIN

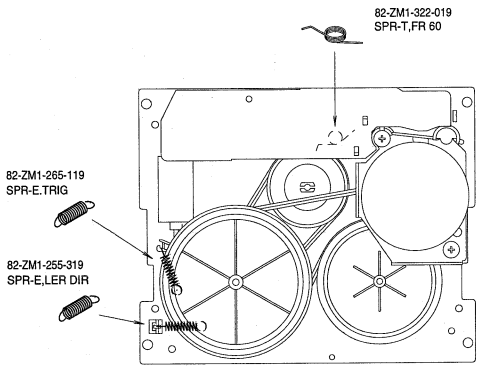
MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-MA1-027-010		WINDOW,CASS L
2	88-MA1-028-010		WINDOW,CASS R
3	88-MA1-004-010		BOX,CASS L
4	88-MA1-005-010		BOX,CASS R
5	82-NP5-218-010		SPR-T,EJECT 1 (SIN)
6	82-NP5-219-010		SPR-T,EJECT 2 (SIN)
7	86-NP6-061-010		REFLECTOR,CASS
8	88-MA1-012-010		PANEL,CD
9	88-MA1-025-010		WINDOW,CD
10	88-MA1-011-010		KEY,CHANGE
11	88-MA1-010-010		KEY,OPEN
12	88-MA1-026-010		WINDOW,AMP
13	88-MA1-033-010		PLATE,GEQ
14	82-NE8-032-010		BADGE,AIWA 27.5
15	88-MA1-060-010		KNOB,RTRY RHYTHM
16	88-MA1-029-010		RING,VOL
17	88-MA1-032-010		PANEL,FR
18	81-532-080-010		LABEL, CASS. COMPT
19	87-NP8-220-010		DMPR,150
20	88-MA1-001-010		CABI,FR H
21	87-NP4-216-010		HLDR,LOCK 1
22	86-NP9-224-010		SPR-C,LOCK
23	82-NP5-229-010		PLATE,LOCK
24	87-NP4-217-010		HLDR,LOCK 2
25	88-MA1-013-010		PANEL,TRAY
26	84-ZG1-245-210		CAP,OPTICAL
27	88-MA1-015-010		KEY,POWER
28	88-MA1-016-010		KEY,BBE
29	88-MA1-059-010		KEY,DEMO
30	88-MA1-019-010		KEY,JOG
31	88-MA1-039-010		KEY,ASSY PLAY
32	88-MA1-040-010		KEY,ASSY FF
33	88-MA1-045-010		REFLECTOR,FUN
34	88-MA1-018-010		KEY,FUN
35	88-MA1-017-010		KEY,PRGM
36	88-MA1-014-010		KEY,GEQ
37	88-MA1-009-010		KEY,DIRECT
38	88-MA1-201-010		GUIDE,PLAY
39	86-MA3-042-010		WINDOW,TOP
40	88-MA1-006-010		PANEL,TOP
41	88-MA1-007-010		PANEL,SIDE L
42	88-MA1-208-010		JOINT,CABI
43	88-MA1-008-010		PANEL,SIDE R
44	87-085-185-010		BUSHING, AC CORD (E)
⚠ 45	87-050-079-010		AC-CORD ASSY,E
46	87-MA3-062-010		FOOT, H17
47	88-MA1-044-010		CABI,REAR LH
48	88-MA1-030-010		KNOB,RTRY MAIN
49	88-MA1-205-010		GUIDE,FL
50	88-MA1-022-010		KEY,MIC

SPRING APPLICATION POSITION



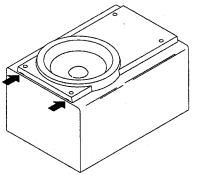


SPEAKER DISASSEMBLY INSTRUSTIONS

Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

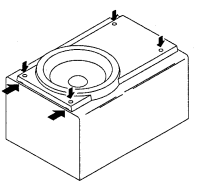
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.2

グリルフレームを外し、4個のゴムキャップをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

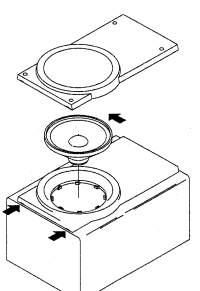
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows arround speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



SPEAKER PARTS LIST (SX-WZR99)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-MS1-001-010		PANEL,FR
2	88-MS1-002-010		PANEL,TW R
3	88-MS1-003-010		PANEL,TW L
4	88-MS1-004-010		PANEL,BA
5	88-MS1-006-010		PANEL,COVER
6	88-MS1-010-010		GRILLE,FRAME ASSY
7	88-MS1-602-010		SPKR, W 240
8	88-MS1-603-010		SPKR, M 140
9	88-MS1-605-010		SPKR, T 60
10	88-MS1-610-010		CORD,SPKR
11	88-MS1-608-010		SPKR, CERAMIC

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	88-MA1-902-010		IB,LH(ESP)M
2	87-043-115-010		FEEDER-ANT,FM
3	87-A90-030-010		ANT,LOOP AM-NC C
⚠ 4	87-099-789-010		PLUG,CONVERSION IR44
5	87-MA6-702-010		RC UNIT,RC-7AS01

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

アイワ株式会社
AIWA CO.,LTD.

9620450, 750038

Tokyo Japan

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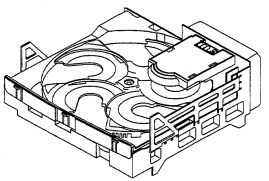
Printed in Singapore

aiwa

V21772

aiwa SERVICE

6ZG-1S
6ZG-1S2
6ZG-1S3



CD MECHANISM

SERVICE MANUAL

• BASIC CD MECHANISM: 3ZG-2 E2

• TYPE: English

BASIC NAME	DERIVATION NAME					
6ZG-1S	D	SH				
6ZG-1S2	D	SH				
6ZG-1S3	D	SH				

■ This mechanism has various derivation. Derivation name is indicated by the Service Manual for eath model.

S/M Code No. 09-984-249-90T

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6ZG-1S2

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6ZG-1S3

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PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel:Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

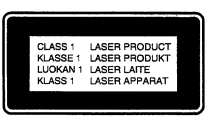
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

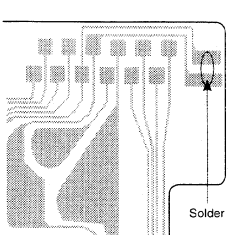


Precaution to replace Optical block (KSS-213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B



This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 6ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 6ZG-1 DSH

SUFFIX
(DERIVATION NAME)

BASIC NAME: 6ZG-1S (SONY IC HIGH END MODEL)
6ZG-1S2 (The 2nd SONY IC MODEL)
6ZG-1S3 (The 3rd SONY IC MODEL)

BASIC NAME	DERIVATION NAME					
6ZG-1S	D	SH	—	—	—	—
6ZG-1S2	D	SH	—	—	—	—
6ZG-1S3	D	SH	—	—	—	—

DERIVATION NAME

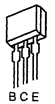
D: Digital output function
SH: Pick up equipped with shutter

TRANSISTOR ILLUSTRATION

2SA933S
DTC114ES

2SA1015
2SC2001
2SD2172
2SD655

2SA1235
2SC2412
2SC2712
DTA114EK
DTC114EK
DTC114TK
DTC123JK
DTC143TK



2SB1329

DISASSEMBLY INSTRUCTIONS

1. How to replace PICK UP.

1) Open the TRAY.
   Push the stopper to arrow direction and release half of the SHAFT SLED.
2) Turn GEAR MAIN CAM to the counterclockwise (arrow "a") direction, and lift up CD mechanism. (Fig-1)
3) Remove SHAFT SLED.
4) CD mechanism in down position, replace PICK UP.
5) Lift up CD mechanism (Fig-1), and Reassemble the SHAFT SLED.

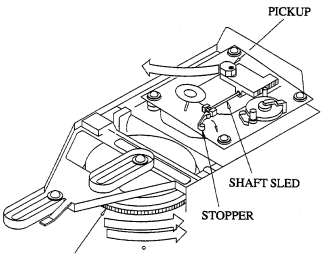
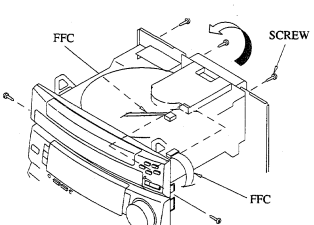


Fig-1

2. How to remove the 5CD CHANGER BLOCK (Fig-2)

1) Remove the two FFC of the CD circuit board, and remove the five SCREWS.
2) Lift 5 CD CHANGER BLOCK from behind, and remove it. (5CD CHANGER BLOCK can be removed even if PANEL TRAY is not removed.)



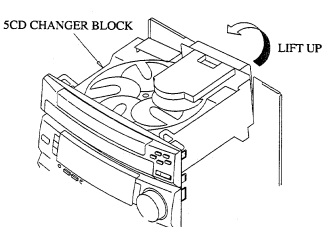
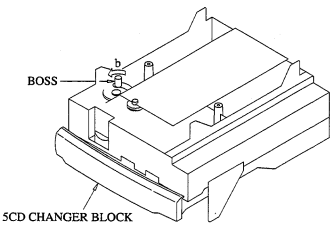


Fig-2

3. The disassemble and reassemble the TRAY

3-1. Disassembling procedure.

1) Push the PLATE GEAR'S Boss at the bottom part of CHAS MECHA strongly to the outside (arrow "b" direction). (Fig-3)
   (Confirm that TRAY appears a little in the front.)
2) Draw TRAY to the open position.
3) Remove FFC, and push the two LEVERS at both side of the CHAS MECH to remove TRAY. (Fig-4)



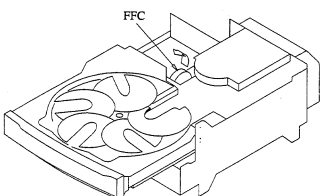


Fig-3

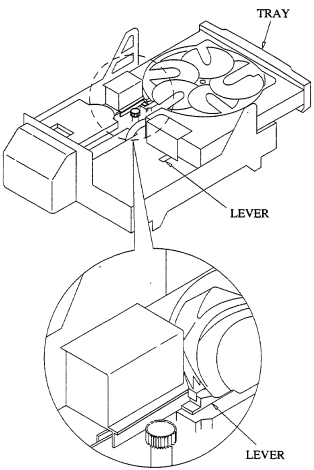


Fig-4

3-2. Reassembling procedure.

1) Confirm that LEVER TRAY is at the most right position and check for the CD Mechanism to be in the down position. (Fig-5)
2) Push in the TRAY along the rail of the CHAS MECHA.
3) After TRAY is half closed and FFC is put in, it can enter by force until the end of TRAY closed. (Fig-6)

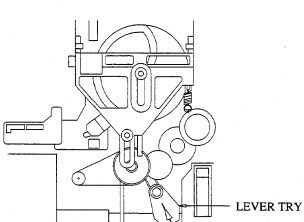


Fig-5

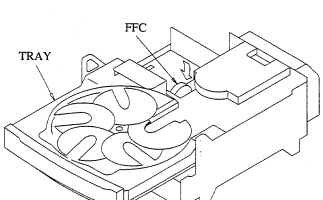


Fig-6

4. How to reassemble the TURN TABLE. (Fig-7)

1) Push LEVER TT in the direction of "C", and put in the TURN TABLE 5CD. (Fig-7)
After reassembly, one of the TURN TABLE DISC TRAY (can be either one of the five disc trays) must be aligned with TURN TABLE 5CD. (Fig-8)
That is, having no gap difference between the TURN TABLE 5CD and the TRAY 5CD.

* When reassembling the TURN TABLE 5CD, it is acceptable facing any CD number (1-5).

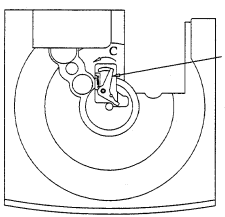


Fig-7

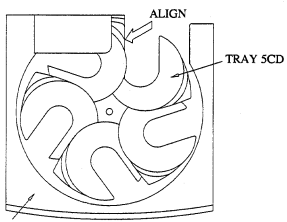


Fig-8

MODEL NO. 6ZG-1S

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-547-010		C-IC,CXA1992AR
	87-A20-546-010		C-IC,CXD2589Q
	87-A20-592-040		C-IC,M51943 AML
	87-070-305-010		IC,BA6897S
	87-001-982-010		IC,TA7291S
TRANSISTOR			
	89-406-555-080		TR,2SD655 (0.5W)
	87-026-463-080		TR,2SA933S (0.3W)
	89-421-722-380		TR,2SD2172VW
	89-320-011-080		TR,2SC2001 (15W)
	87-026-223-080		TR,DTC143TK
	89-110-155-080		TR,2SA1015(0.4W)
	87-026-608-080		C-TR,DTC 123 JK
	89-327-125-080		CHIP TR,2SC2712GR<D>
DIODE			
	87-020-465-080		DIODE,1SS133 (110MA)
CD MAIN C.B			
C1	87-010-196-020		C-CAP,S 0.1-25 F
C2	87-010-260-080		CAP, ELECT 47-25V
C4	87-010-197-020		C-CAP,S 0.01-25 B
C101	87-010-263-040		CAP,E 100-10
C102	87-010-178-020		C-CAP,S 1000P-50 B
C103	87-010-550-040		CAP,E 100-6.3 GAS
C104	87-010-182-020		C-CAP,S 2200P-50 B
C105	87-010-198-020		C-CAP,S 0.022-25 B
C106	87-016-081-020		C-CAP,S 0.1-16 RK
C107	87-016-081-020		C-CAP,S 0.1-16 RK
C108	87-016-081-020		C-CAP,S 0.1-16 RK
C109	87-010-497-040		CAP,E 4.7-35 GAS
C110	87-010-198-080		CAP, CHIP 0.022
C111	87-010-197-020		C-CAP,S 0.01-25 B
C112	87-010-402-040		CAP,E 2.2-50 SME
C113	87-010-382-040		CAP,E 22-25 SME
C114	87-010-213-020		C-CAP,S 0.015-25 B
C115	87-010-263-040		CAP,E 100-10
C116	87-010-197-020		C-CAP,S 0.01-25 B
C117	87-016-369-020		C-CAP,S 0.033-25 B K
C118	87-010-197-020		C-CAP,S 0.01-25 B
C119	87-016-369-020		C-CAP,S 0.033-25 B K
C120	87-010-197-020		C-CAP,S 0.01-25 B
C121	87-010-494-040		CAP,E 1-50 GAS
C122	87-010-154-020		C-CAP,S 10P-50 CH
C123	87-010-154-020		C-CAP,S 10P-50 CH
C124	87-010-154-020		C-CAP,S 10P-50 CH
C125	87-010-596-020		C-CAP,S 0.047-16 RK
C126	87-010-596-020		C-CAP,S 0.047-16 RK
C127	87-012-140-020		C-CAP,S 470P-50 CH
C128	87-010-596-020		C-CAP,S 0.047-16 RK
C129	87-010-198-020		C-CAP,S 0.022-25 B
C130	87-016-081-020		C-CAP,S 0.1-16 RK
C131	87-010-550-040		CAP,E 100-6.3 GAS
C132	87-010-550-040		CAP,E 100-6.3 GAS
C133	87-012-158-020		C-CAP,S 390P-50 J CH
C150	87-010-145-020		C-CAP,S 1P-50 C CH
C202	87-010-596-020		C-CAP,S 0.047-16 RK
C203	87-010-188-020		C-CAP,S 6800P-50 B
C204	87-012-156-020		C-CAP,S 220P-50 CH
C205	87-018-134-080		CAPACITOR,TC-U 0.01-16
C206	87-010-400-040		CAP,E 0.47-50
C207	87-010-197-020		C-CAP,S 0.01-25 B
C208	87-010-318-020		C-CAP,S 47P-50 CH<D>
C209	87-012-154-020		C-CAP,S 150P-50 J CH GRM

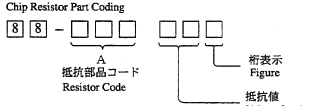
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C210	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C211	87-010-176-020		C-CAP,S 680P-50 J SL
C212	87-010-176-020		C-CAP,S 680P-50 J SL
C213	87-010-382-040		CAP,E 22-25 SME<D>
C213	87-010-401-040		CAP,E 1-50 SME
C214	87-010-382-040		CAP,E 22-25 SME<D>
C214	87-010-401-040		CAP,E 1-50 SME
C215	87-010-318-020		C-CAP,S 47P-50 CH
C216	87-010-318-020		C-CAP,S 47P-50 CH
C217	87-010-380-040		CAP,E 47-16 SME
C218	87-010-197-020		C-CAP,S 0.01-25 B
C219	87-010-196-020		C-CAP,S 0.1-25 F
C220	87-010-370-040		CAP,E 330-6.3 SME
C221	87-010-197-020		C-CAP,S 0.01-25 B
C222	87-010-186-020		C-CAP,S 4700P-50 B
C223	87-016-081-020		C-CAP,S 0.1-16 RK
C228	87-018-209-080		CAP, CER 0.1-50V
C230	87-016-081-020		C-CAP,S 0.1-16 RK
C231	87-018-209-080		CAP, CER 0.1-50V
C401	87-010-403-080		CAP, ELECT 3.3-50V
C402	87-010-403-040		CAP,E 3.3-50 SME
C501	87-016-459-040		CAP,E 470-10 SMG
C502	87-010-197-020		C-CAP,S 0.01-25 B
C503	87-010-263-040		CAP,E 100-10
C504	87-010-196-020		C-CAP,S 0.1-25 F
C505	87-010-196-020		C-CAP,S 0.1-25 F
C506	87-010-196-020		C-CAP,S 0.1-25 F
C507	87-010-196-020		C-CAP,S 0.1-25 F
C508	87-016-459-040		CAP,E 470-10 SMG
C509	87-010-196-020		C-CAP,S 0.1-25 F
C510	87-010-196-020		C-CAP,S 0.1-25 F
C601	87-010-197-020		C-CAP,S 0.01-25 B
C602	87-016-251-040		CAP,E 220-16 SMG
C603	87-010-196-020		C-CAP,S 0.1-25 F
C701	87-010-322-020		C-CAP,S 100P-50 CH
C702	87-010-318-020		C-CAP,S 47P-50 CH
C703	87-010-318-020		C-CAP,S 47P-50 CH
C705	87-010-178-020		C-CAP,S 1000P-50 B
C706	87-018-199-080		CAP, CER 330P
C901	87-010-260-040		CAP,E 47-25 SME<D>
C902	87-010-196-020		C-CAP,S 0.1-25 F<D>
CN3	86-ZG1-609-010		CONN ASSY,6P
FB1	87-003-223-080		FERRITE BEAD BL02RN2
FB2	87-003-223-080		FERRITE BEAD BL02RN2
FB3	87-003-223-080		FERRITE BEAD BL02RN2
FC1	86-ZG1-605-010		CABLE,FFC 16P
FC2	86-ZG1-608-010		CABLE,FFC 8P
L28	83-XM1-617-080		C-COIL,BK2125HM601
L41	83-XM1-617-080		C-COIL,BK2125HM601
L101	87-003-102-080		COIL, 10UH
L201	87-003-102-080		COIL, 10UH
LED901	87-A40-123-010		LED,SLZ-8128A-01-B<D>
M601	87-045-305-010		MOTOR, RF-530TB DC-5V (2MA)
⚠PR1	87-026-689-080		PROTECTOR,1A 60V 491
R101	87-022-363-020		C-RES,S 68K-1/10W F
R102	87-022-363-020		C-RES,S 68K-1/10W F
R103	87-022-363-020		C-RES,S 68K-1/10W F
R104	87-022-363-020		C-RES,S 68K-1/10W F
R105	87-022-365-020		C-RES,S 100K-1/10W F
R106	87-022-365-020		C-RES,S 100K-1/10W F
R420	87-029-060-080		RES,FUSE 33-1/4 W
S601	87-036-109-010		PUSH SWITCH
S602	87-036-109-010		PUSH SWITCH
S603	87-036-109-010		PUSH SWITCH
X201	87-A70-066-010		VIB,XTAL 16.934MHZ
LED C.B			
LED701	87-017-733-080		LED,SEL1250SM
LED702	87-017-350-080		LED,SEL1550CM

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LED703	87-017-733-080		LED,SEL1250SM
T-T C.B			
C411	87-018-214-080		CAP TC U 0.1-50F
LED411	87-070-288-010		LED,GL380
M401	87-A90-036-010		MOT ASSY,RF-300CA-11
PS401	87-A90-156-010		SNSR,SG-240
Q411	87-A30-031-010		P-TR,PT380F
S401	87-036-109-010		PUSH SWITCH

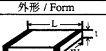
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

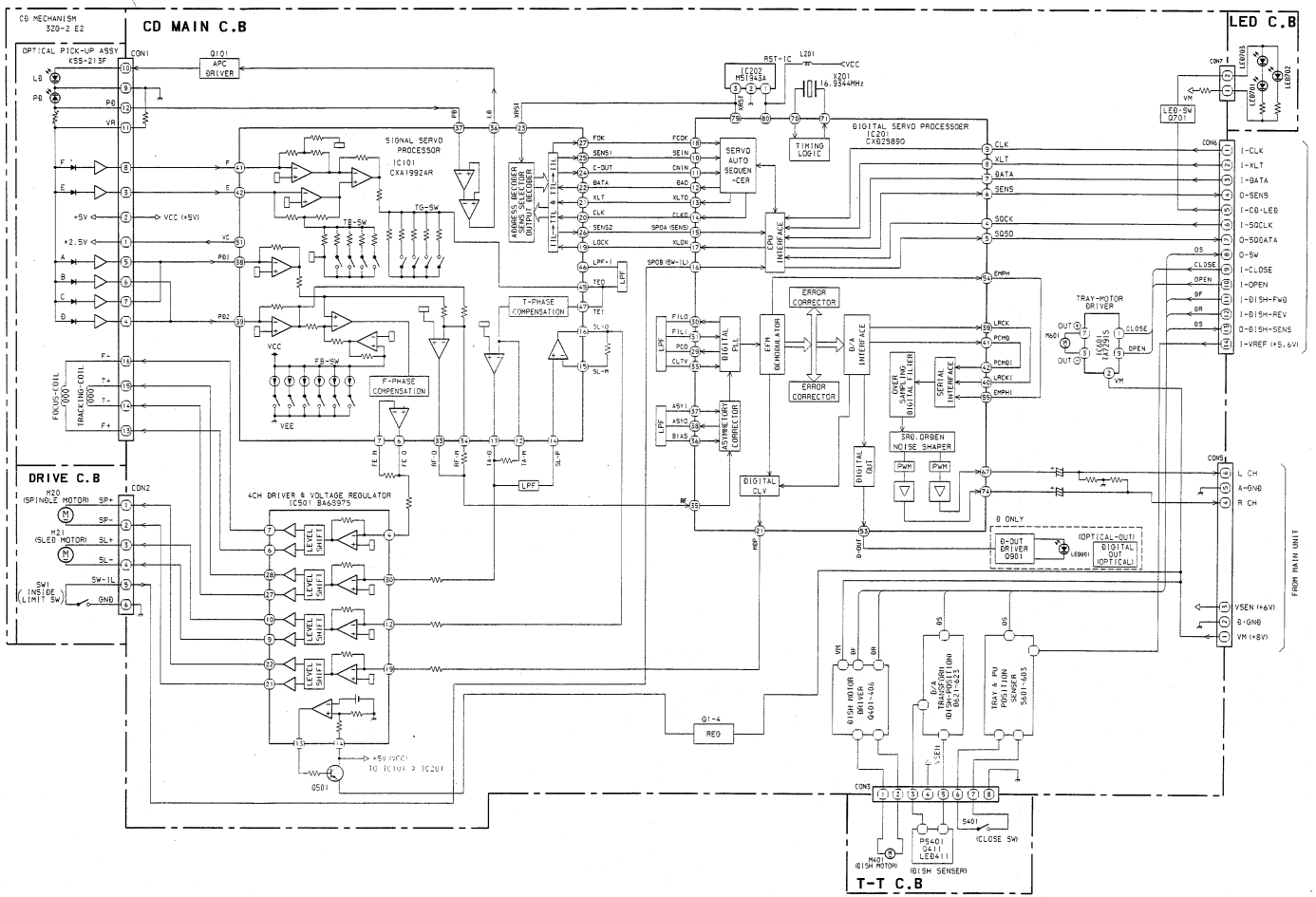
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

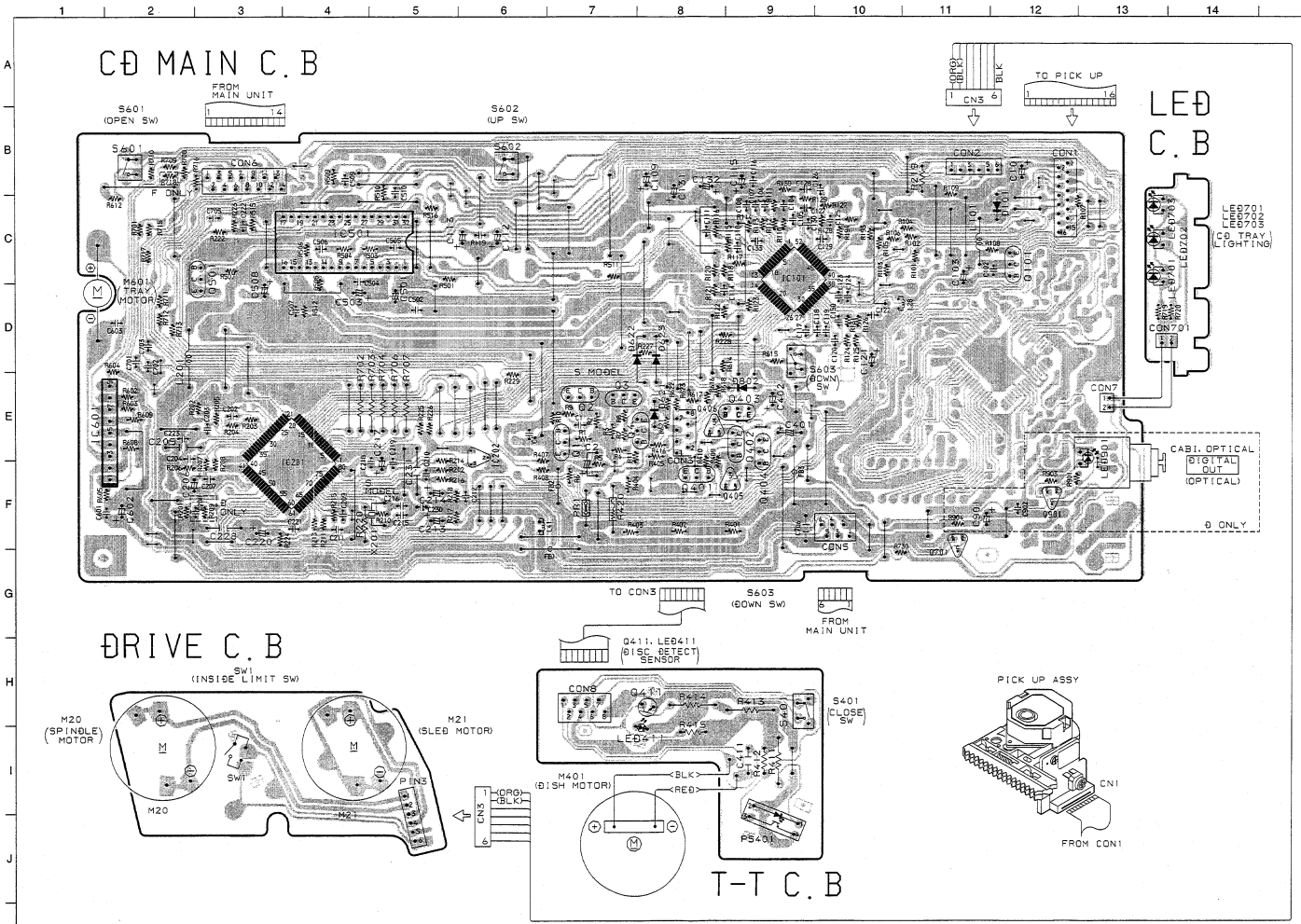


チップ抵抗
Chip resistor

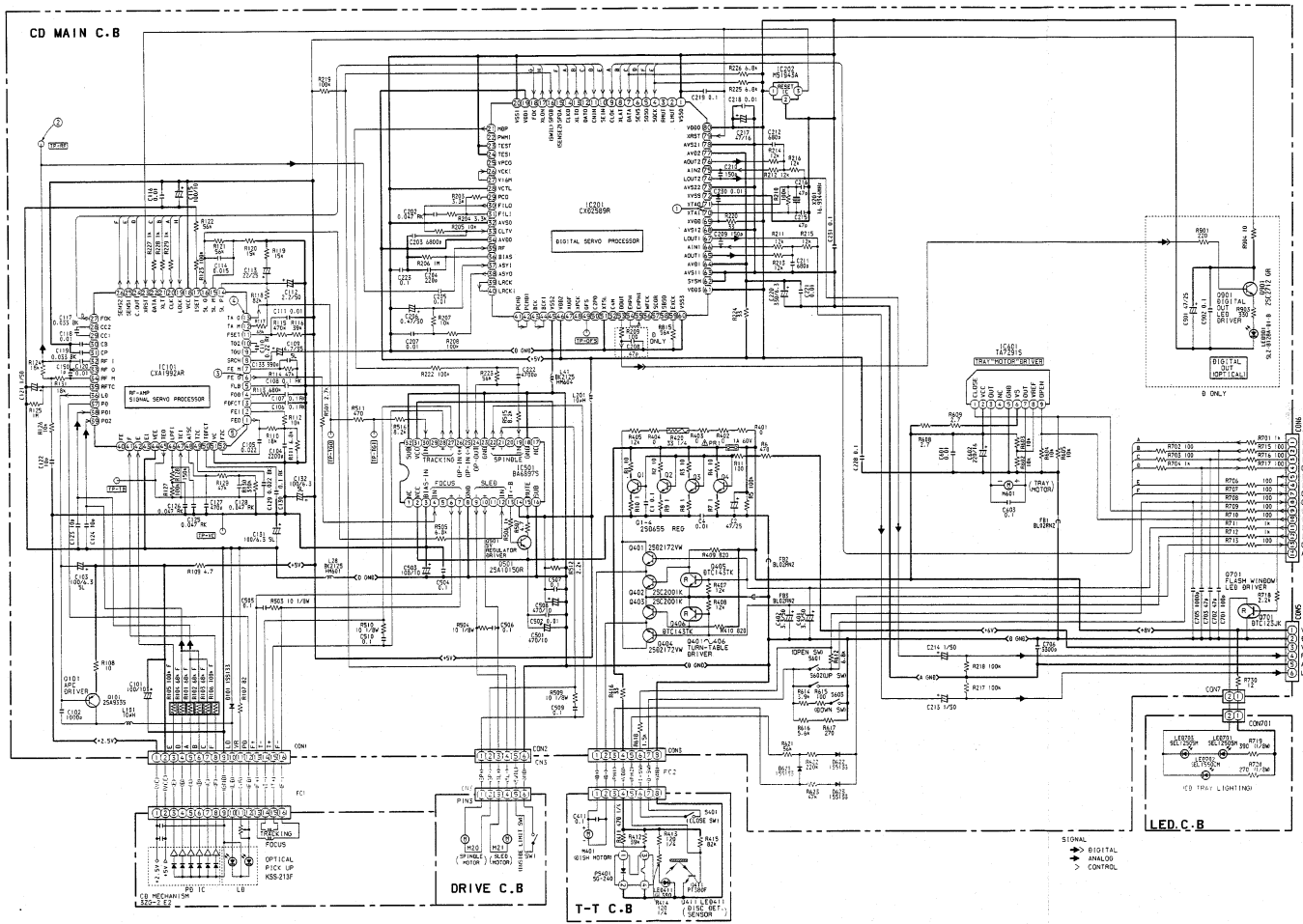
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

BLOCK DIAGRAM




CD MAIN C.B
FROM MAIN UNIT
S601 (OPEN SW)
S602 (UP SW)
TO PICK UP
CN3
LED C.B
LED701
LED702
LED703
(CD TRAY LIGHTING)
CON7
CABL OPTICAL
DIGITAL OUT (OPTICAL)
D ONLY
M601 TRAY MOTOR
S. MODEL
S603 (DOWN) SW
TO CON3
FROM MAIN UNIT
DRIVE C.B
SW1 (INSIDE LIMIT SW)
M20 (SPINDLE MOTOR)
M21 (SLED MOTOR)
PIN3
Q411, LED411 (DISC DETECT SENSOR)
CON8
S401 (CLOSE SW)
M401 (DISH MOTOR)
PICK UP ASSY
CN1
FROM CON1
T-T C.B

SCHEMATIC DIAGRAM



IC DESCRIPTION
IC, CXA1992AR

Pin No.	Pin Name	I/O	Description
1	FEO	O	Output terminal for focus error amplifier. Internally connected to window comparator input for bias condition.
2	FEI	I	Input terminal for focus error.
3	FDFCT	I	Capacitor connection terminal for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FE_O	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TA_M	I	Tracking amplifier inverted input pin.
13	TA_O	O	Tracking drive output.
14	SL_P	I	Sled amplifier non-inverted input pin.
15	SL_M	I	Sled amplifier inverted input pin.
16	SL_O	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input with external resistance connected.
18	Vcc	I	Power supply.
19	LOCK	I	"L" setting starts sled disorder-prevention circuit. (Not pull-up resistance)
20	CLK	I	Clock input for serial data transfer from CPU. (No pull-up resistance)
21	XLT	I	Latch input from CPU. (No pull-up resistance)
22	DATA	I	Serial data input from CPU. (No pull-up resistance)
23	XRST	I	Reset system at "L" setting. (No pull-up resistance)
24	C_OUT	O	Signal output for track number counting.
25	SENS1	O	FZC, DFCT1, TZC, BALH, TGH, FOH, or ATSC is output depending on the command from CPU.
26	SENS2	O	DFCT2, MIRR, BALL, TGL or FOL is output depending on the command from CPU.
27	FOK	O	Output terminal for focus OK comparator.
28	CC2	I	Input pin where the DEFECT bottom hold output is capacitance coupled.
29	CC1	O	DEFECT bottom-hold output terminal. Internally connected to interruption comparator input.
30	CB	I	Connection terminal for DEFECT bottom-hold capacitor.
31	CP	I	Connection terminal for MIRR hold-capacitor. Anti-reverse input terminal for MIRR comparator.

Pin No.	Pin Name	I/O	Description
32	RF_I	I	Input terminal by capacity combination of RF summing amplifier.
33	RF_O	O	Output terminal of RF summing amplifier. Checkpoint of Eye pattern.
34	RF_M	I	Anti-reverse input terminal for RF summing amplifier. The gain of RF amplifier is decided by the connection resistance between RF_M and RFO terminals.
35	RFTC	I	This is a pin where the selection time constant is externally connected to control the RF level.
36	LD	O	APC amplifier output terminal.
37	PD	I	APC amplifier input terminal.
38, 39	PD1, PD2	I	RFI-V amplifier inverted input pin. These pins are connected to the A+C and B+C pins of the optical pickup, receiving by currents input.
40	FEBIAS	I/O	Bias adjustment pin of the focus error amplifier.
41, 42	F, E	I	F and EIV amplifier inverted input pins. These pins are connected to the F and E of the optical pickup, receiving by current input.
43	EI	—	Gain adjustment pin of the I-V amplifier E. (When not in use of BAL automatic adjustment)
44	VEE	—	GND connection pin.
45	TEO	O	Output terminal for tacking-error amplifier. Output E-F signal.
46	LPFI	I	BAL adjustment comparator input pin. (Input through LPF from TEO)
47	TEI	I	Input terminal for tracking error.
48	ATSC	I	Window-comparator input terminal for detecting ATSC.
49	TZC	I	Input terminal for tracking-zero cross comparator.
50	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
51	VC	O	Output terminal for DC voltage reduced to half of VCC+VEE.
52	FZC	I	Input terminal for focus-zero cross comparator.

IC, CXD2589Q

Pin No.	Pin Name	I/O	Description
1, 20, 45, 60	VSS	—	GND.
2	LMUT	O	Lch-"0" detect flag.
3	RMUT	O	Rch-"0" detect flag.
4	SQCK	I	Clock input for SQSO read out.
5	SQSO	O	SubQ 80 bit serial output.
6	SENS	O	SENS signal output to CPU.
7	DATA	I	Serial data input from CPU.
8	XLAT	I	Latch input from CPU, Latch serial data at fall down.
9	CLOK	I	Clock input to serial data transfer from CPU.
10	SEIN	I	SENS input from SSP.
11	CNIN	I	Numbers of track jump are counted and input.
12	DATO	O	Serial data output to SSP.
13	XLTO	O	Serial-data latch output to SSP. Latch at fall down.
14	CLKO	O	Clock output for serial data transfer to SSP.
15	SPOA	I	Microcomputer expansion interface. (Input A)
16	SPOB	I	Microcomputer expansion interface. (Input B)
17	XLON	O	Microcomputer expansion interface. (Output)
18	FOK	I	Focus OK input terminal. Used for SENS output and servo-auto sequencer.
19, 46, 61, 80	VDD	—	Power supply. (+5V)
21	MDP	O	Servo control for spindle motor.
22	PWMI	I	External control input for spindle motor.
23	TEST	I	TEST terminal. (Connected to GND)
24	TESI	I	TEST terminal. (Connected to GND)
25	VPCO	O	Charge pump output for extensive EFM PLL.
26	VCKI	I	VCO2 oscillator input for extensive EFM PLL.
27	V16M	O	VCO2 oscillator output for extensive EFM PLL.
28	VCTL	I	VCO2 control voltage input for extensive EFM PLL.
29	PCO	O	Charge pump output for master PLL.
30	FILO	O	Filter (slave = digital PLL) output for master PLL.
31	FILI	I	Filter input for master PLL.
32	AVSS	—	Analog GND.
33	CLTV	I	VCO control voltage input for master.
34	AVDD	—	Analog power. (+5V)
35	RF	I	EFM signal input.
36	BIAS	I	Constant current input to asymmetry circuit.
37	ASYI	I	Comparison voltage input to asymmetry circuit.
38	ASYO	O	EFM full-swing output. (L=VSS, H=VDD)
39	LRCK	O	D/A interface, LR clock output f=FS.
40	LRCKI	I	LR clock input.
41	PCMD	O	D/A interface, serial data output. (2's COMP, MSB first)
42	PCMDI	I	D/A interface, serial data input. (2's COMP, MSB first)

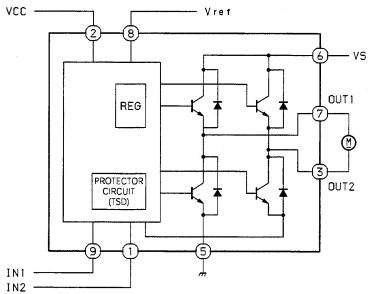
Pin No.	Pin Name	I/O	Description
43	BCK	O	D/A interface bit clock output.
44	BCKI	I	D/A interface bit clock input.
47	XUGF	O	XUGF output, MNT1 or RPCK output by switching command.
48	XPCK	O	XPLCK output, MNT0 output by switching command.
49	GFS	O	GFS output, MNT3 or XRAOF output by switching command.
50	C2PO	O	C2PO output, GTOP output by switching command.
51	XTSL	I	X'tal select input terminal, X'tal: 16.9344MHz = "L" 33.8688MHz = "H".
52	C4M	O	4.2336MHz output, Output 1/4 divided frequency of VCKI at CAV-W mode.
53	DOUT	O	Digital Out connector output signal.
54	EMPH	O	"H" when the playback disc has emphasis. "L" when it does not.
55	EMPHI	I	De-emphasis ON/OFF, "H" when ON, "L" when OFF.
56	WFCK	O	WFCK output.
57	SCOR	O	H output when the subcode sync S0 or S1 is detected.
58	SESO	O	Serial output for SubP-W.
59	EXCK	I	SBSO read out clock input.
62	SYSM	I	Mute input terminal, Active the "H" setting.
63	AVSS	—	Analogue GND.
64	AVDD	—	Analogue power supply. (+5V)
65	AOUT1	O	Lch/analogue output terminal.
66	AINI	I	Lch/OP AMP input terminal.
67	LOUT1	O	Lch/LINE output terminal.
68	AVSS	—	Analogue GND.
69	XVDD	—	Power supply for master clock.
70	XTAI	I	Input terminal for crystal oscillator circuit. Input external master clock from this terminal.
71	XTAO	O	Output terminal for crystal oscillator circuit.
72	XVSS	—	GND terminal for master clock.
73	AVSS	—	Analogue GND.
74	LOUT2	O	Rch/LINE output terminal.
75	AIN2	I	Rch/OP AMP input terminal.
76	AOUT2	O	Rch/analogue output terminal.
77	AVDD	—	Analogue power supply. (+5V)
78	AVSS	—	Analogue GND.
79	XRST	I	Reset system at "L" setting.

Note)

- PCMD is the two's complement output with MSB first.
- GTOP monitors the protection status of the Frame Sync. (H: Sync protection window opened).
- XUGF is the Frame Sync negative pulse which is obtained from the EFM signal. This is the signal before the sync protection.
- XPLCK is the inverted signal of the EFM PLL clock. The PLL works so that the fall-down edge and the changed point of the EFM signal agree.
- GFS is the signal that goes "H" when the Frame Sync and the internally inserted timing agree.
- RFCK is the signal having 136 micro-seconds (during normal speed) that is generated to have the same accuracy as X'tal.
- C2PO is the signal indicating the error status of the data.
- XRAOF is the signal that is generated when the 16k RAM goes outside the jitter margin ±4F.

IC BLOCK DIAGRAM

IC, TA7291S

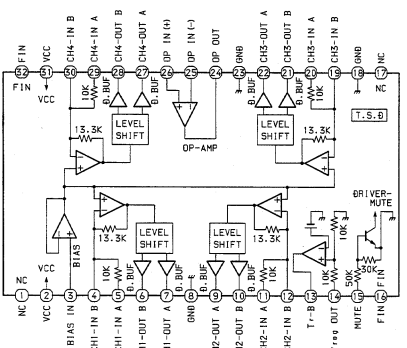


INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE

NOTE : INPUT "H" ACTIVE

IC, BA6897S



CD TEST MODE

< How to Enter the Test Mode >

Note: Target models of this test mode.
CX-ZR550
CX-ZVR55

While pressing the CD key, insert the AC power cord to AC wall outlet.

< When the Machine Has Entered the Test Mode >

The system is initialized and the main power is turned on. During the test mode, the main power of the CD block is turned on always. The test mode starts with the [Sled mode].

< Types of Test Mode >

[Sled mode]

All displays of the FL tubes light. The optical pickup can be moved by pressing [⟪] or [⟫] key.

Pressing the[□] key establishes the [Focus mode].
Pressing the [▷] key establishes the [Play mode].

Pressing the [⟪] key moves the sled to outer circumference.
Pressing the [⟫] key moves the sled to inner circumference.
Pressing OPEN/CLOSE key opens or closes the tray.

[Focus mode]

Lighting of all displays of the FL tubes are turned off and returns to normal display. The focus search is performed in the focus mode regardless whether disc is inserted or not, or focus OK or NG. (Numbers of times of focus search is unlimited. Auto sequence is not used.)
Focus servo is not locked in even the focus is obtained.

Pressing the [▷] key establishes the [Play mode].
Pressing the [⟪] key decreases the track number to -1.
Pressing the [⟫] key increases the track number to +1.
Pressing OPEN/CLOSE key opens or closes the tray.
The machine enters the [Sled mode].

[Play mode]

Lighting of all displays of the FL tubes are turned off and returns to normal display. The focus search (numbers of search is unlimited) is performed. When focus comes to in-focus, the focus servo is locked in and the machines enters the normal play mode.
During [Play mode], GFS and sound skipping are not monitored.
When focus becomes out-of-focus, another attempt is made to search for focus.
The tracking servo and the sled servo can be turned on and off by pressing the [▷] key.

Pressing the [□] key establishes the [Sled mode].
The [▷] display can be turned on and off by pressing the [II] key .

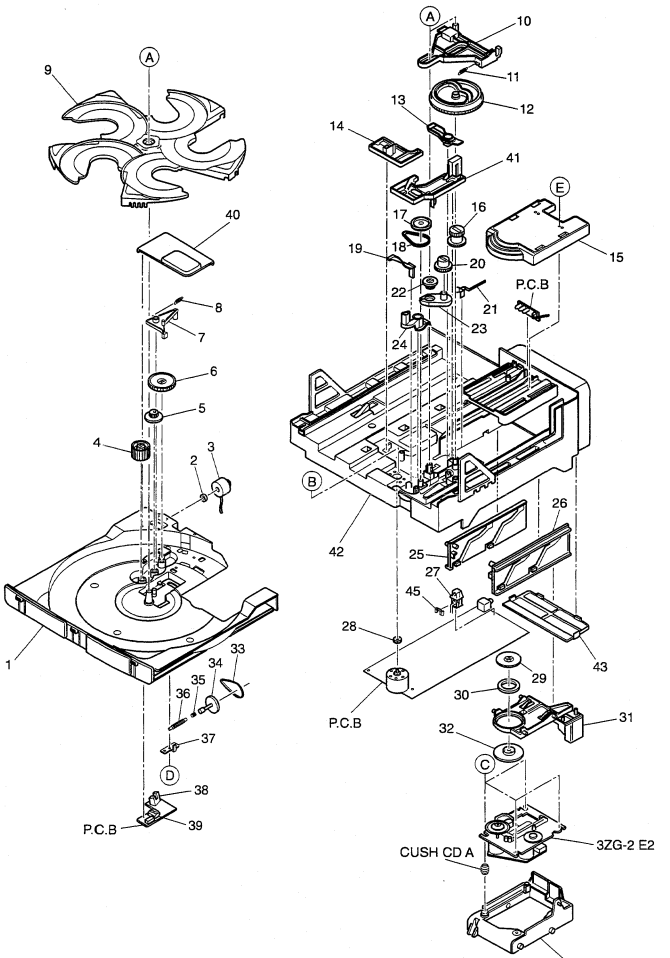
While the [II] display is turned off:
CLV-A Tracking servo: on
Sled servo: on
While the [II] display is turned on:
CLV-A Tracking servo: off
Sled servo: off

Pressing the [⟪] key decreases the track number to -1.
Pressing the [⟫] key increases the track number to +1.
Pressing OPEN/CLOSE key opens or closes the tray.
The machine enters the [Sled mode].

< How to Exit the Test Mode >

Remove the AC power cord from power outlet, or turn off the system power.

MECHANICAL EXPLODED VIEW 1/1

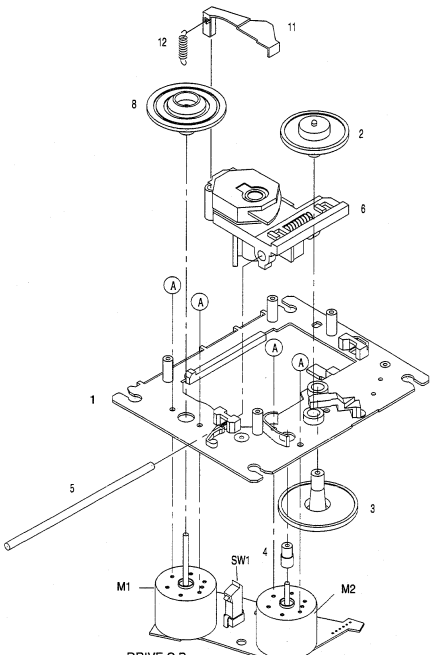


MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZG1-001-310		TRAY,5CD
2	81-ZG1-212-010		PULLY,LOAD MO
3	87-A90-036-010		MOT ASSY,RF-300CA-11
4	86-ZG1-228-110		GEAR,TT-B
5	86-ZG1-227-110		GEAR,TT-A
6	86-ZG1-223-110		GEAR,WORM-WHEEL TT
7	86-ZG1-224-110		LEVER,TT(*)
8	86-ZG1-226-010		SPR-R,LEVER TT
9	86-ZG1-002-210		TURN TABLE,5CD
10	86-ZG1-211-210		JOINT,CAM
11	86-ZG1-216-010		SPR-E,JT
12	86-ZG1-203-210		GEAR,MAIN CAM
13	86-ZG1-213-110		LEVER,LOAD
14	86-ZG1-214-110		LEVER,PROTECT
15	86-ZG1-004-010		REFLECTOR,CD
16	86-ZG1-205-110		GEAR,TRAY
17	84-ZG1-207-010		PULLEY,RELAY
18	84-ZG1-209-010		BELT,SQ1.8-117.7
19	86-ZG1-217-010		LEVER,SW
20	86-ZG1-206-110		GEAR,RELAY B
21	86-ZG1-220-110		SPR-P,LOCK
22	86-ZG1-204-110		GEAR,RELAY A
23	86-ZG1-218-110		PLATE,GEAR
24	86-ZG1-208-010		LEVER,TRAY
25	86-ZG1-209-110		SLIDER,CAM L(*)
26	86-ZG1-210-110		SLIDER,CAM R(*)
27	84-ZG1-244-310		CABI,OPTICAL<S2>
28	84-ZG2-228-010		PULLEY,MOT
29	83-ZG3-211-010		PLATE,DISC
30	83-ZG3-602-010		RING,MAG
31	86-ZG1-215-010		HLDR,CHUCK
32	86-ZG1-238-010		HLDR,MAGNET 6ZG N
33	86-ZG1-225-010		BELT,SQ1.2-32.9
34	86-ZG1-221-010		PULLEY,TT
35	86-ZG1-231-010		SPR-C,WORM
36	84-ZG1-256-010		GEAR,WORM N2
37	86-ZG1-232-010		SPR-P,WORM
38	86-ZG1-229-010		HLDR,SENSOR
39	86-ZG1-230-010		HLDR,DISC SENSOR
40	86-ZG1-003-110		COVER,TRAY
41	86-ZG1-212-310		SLIDER,LOAD
42	86-ZG1-201-210		CHAS,MECHA<S2,S>
43	86-ZG1-240-010		CHAS,MECHA TY<S3>
44	86-ZG1-005-110		COVER,CHAS
45	86-ZG1-202-110		HLDR,MECHA
46	84-ZG1-261-010		LID,OPTICAL
A	87-078-168-010		VFT2+3-12(F10) BLK
B	87-251-072-410		U+2.6-5
C	81-ZG1-254-010		S-SCREW,MECH HLDR
D	87-067-579-010		TAPPING SCREW, BVT2+3-8
E	87-067-703-010		TAPPING SCREW, BVT2+3-10

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-1 E2)



CD MECHANISM PARTS LIST 1/1 (3ZG-1 E2)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-247-210		CHAS ASSY,SHT5
2	83-ZG2-235-010		GEAR,A3
3	83-ZG2-205-210		GEAR,B
4	83-ZG2-236-010		GEAR MOTOR 3
5	83-ZG2-240-010		SHAFT,SLIDE 3
6	87-A90-836-010		PICKUP,KSS-213F
8	83-ZG2-227-010		TURN TABLE,C1
11	83-ZG2-245-110		LEVER,SHUTTER
12	83-ZG2-250-010		SPR-E,SHT 2
A	87-261-032-210		SCREW V+2-3

MODEL NO. 6ZG-1S2

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-547-010		C-IC,CXA1992AR
	87-A20-546-010		C-IC,CXD2589Q
	87-A20-592-040		C-IC,M51943 AML<D>
	87-001-792-080		IC,NJM2100M<D>
	87-070-305-010		IC,BA6897S<D>
	87-A20-856-010		IC,BA6898S
	87-001-982-010		IC,TA7291S
	86-ZG1-649-010		C-IC,UPD789026GB-510-MTX
TRANSISTOR			
	89-406-555-080		TR,2SD655 (0.5W)
	87-026-245-080		TR,DTC114ES
	87-026-235-080		CHIP-TR,DTC114EK
	87-026-463-080		TR,2SA933S (0.3W)
	89-324-123-080		C-TR,2SC2412K S<D>
	87-026-227-080		CHIP-TR,DTA114EK<D>
	89-421-722-380		TR,2SD2172V/W
	89-320-011-080		TR,2SC2001 (15W)
	87-026-239-080		TR,DTC114TK (0.2W)<D>
	87-026-223-080		TR,DTC143TK
	89-110-155-080		TR,2SA1015(0.4W)<D>
	89-213-292-380		TR,2SB1329QR
	87-026-608-080		C-TR,DTC 123 JK
	87-A30-075-080		C-TR,2SA1235K<D>
	89-327-125-080		CHIP TR,2SC2712GR<D>
DIODE			
	87-A40-348-080		ZENER,MTZJ3.3A
	87-027-583-080		ZENER,HZ9B1L (200MA)
	87-020-465-080		DIODE,1SS133 (110MA)<D>
	87-A40-291-080		DIODE,1N4148 (CPT)
CD MAIN C.B			
C1	87-010-196-080		CHIP CAPACITOR,0.1-25
C2	87-010-260-080		CAP, ELECT 47-25V
C3	87-010-221-040		CAP,E 470-10 SME
C4	87-010-197-020		C-CAP,S 0.01-25 B
C5	87-010-184-020		C-CAP,S 3300P-50 B
C101	87-010-263-040		CAP,S 100-10<D>
C101	87-010-550-040		CAP,E 100-6.3 GAS
C102	87-010-178-020		C-CAP,S 1000P-50 B
C103	87-010-550-040		CAP,E 100-6.3 GAS
C104	87-010-182-020		C-CAP,S 2200P-50 B
C105	87-010-198-020		C-CAP,S 0.022-25 B
C106	87-016-081-080		C-CAP,S 0.1-16 RK
C107	87-016-081-080		C-CAP,S 0.1-16 RK
C108	87-016-081-080		C-CAP,S 0.1-16 RK
C109	87-010-497-040		CAP,E 4.7-35 GAS<D>
C109	87-010-404-040		CAP,E 4.7-50 SME
C110	87-016-081-080		C-CAP,S 0.1-16 RK
C111	87-010-197-020		C-CAP,S 0.01-25 B
C112	87-010-402-040		CAP,E 2.2-50 SME
C113	87-010-382-040		CAP,E 22-25 SME
C114	87-010-213-020		C-CAP,S 0.015-25 B
C115	87-010-263-040		CAP,E 100-10
C116	87-010-197-020		C-CAP,S 0.01-25 B
C117	87-016-369-020		C-CAP,S 0.033-25 B K
C117	87-010-186-020		C-CAP,S 4700P-50 B<D>
C118	87-010-197-020		C-CAP,S 0.01-25 B
C119	87-016-369-020		C-CAP,S 0.033-25 B K
C120	87-010-197-020		C-CAP,S 0.01-25 B
C121	87-010-494-040		CAP,E 1-50 GAS<D>
C121	87-010-401-040		CAP,E 1-50 SME
C122	87-010-154-020		C-CAP,S 10P-50 CH
C123	87-010-154-020		C-CAP,S 10P-50 CH
C124	87-010-154-020		C-CAP,S 10P-50 CH
C125	87-010-596-020		C-CAP,S 0.047-16 RK
C126	87-010-596-020		C-CAP,S 0.047-16 RK
C127	87-012-140-020		C-CAP,S 470P-50 CH
C128	87-010-596-020		C-CAP,S 0.047-16 RK
C129	87-010-198-020		C-CAP,S 0.022-25 B
C130	87-016-081-080		C-CAP,S 0.1-16 RK
C131	87-010-550-040		CAP,E 100-6.3 GAS
C132	87-010-550-040		CAP,E 100-6.3 GAS
C133	87-012-158-020		C-CAP,S 390P-50 J CH
C150	87-010-145-020		C-CAP,S 1P-50 C CH<D>
C202	87-010-596-020		C-CAP,S 0.047-16 RK
C203	87-010-188-020		C-CAP,S 6800P-50 B
C204	87-012-156-020		C-CAP,S 220P-50 CH
C205	87-018-133-080		CAPACITOR,CER 4700P-16V<D>
C205	87-018-134-080		CAPACITOR,TC-U 0.01-16
C206	87-010-400-040		CAP,E 0.47-50
C207	87-010-197-020		C-CAP,S 0.01-25 B
C208	87-010-318-020		C-CAP,S 47P-50 CH<D>
C209	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C210	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C211	87-010-176-020		C-CAP,S 680P-50 J SL
C212	87-010-176-020		C-CAP,S 680P-50 J SL
C213	87-010-400-040		CAP,E 0.47-50
C213	87-010-382-040		CAP,E 22-25 SME<D>
C214	87-010-400-040		CAP,E 0.47-50
C214	87-010-382-040		CAP,E 22-25 SME<D>
C215	87-010-318-020		C-CAP,S 47P-50 CH
C216	87-010-318-020		C-CAP,S 47P-50 CH
C217	87-010-101-040		CAP,E 220-16 SME
C217	87-010-380-040		CAP,E 47-16 SME<D>
C218	87-010-197-020		C-CAP,S 0.01-25 B
C219	87-010-196-020		C-CAP,S 0.1-25 F
C220	87-010-370-040		CAP,E 330-6.3 SME
C221	87-010-197-080		CAP, CHIP 0.01 DM
C222	87-010-186-020		C-CAP,S 4700P-50 B
C223	87-016-081-020		C-CAP,S 0.1-16 RK
C224	87-010-805-080		CAP, S 1-16
C228	87-018-134-080		CAPACITOR,TC-U 0.01-16
C230	87-018-209-080		CAP, CER 0.1-50V<D>
C231	87-018-209-080		CAP, CER 0.1-50V<D>
C231	87-018-134-080		CAPACITOR,TC-U 0.01-16
C301	87-010-101-080		CAP, ELECT 220-16<D>
C302	87-010-263-080		CAP, ELECT 100-10V<D>
C305	87-010-318-020		C-CAP,S 47P-50 CH<D>
C306	87-010-318-020		C-CAP,S 47P-50 CH<D>
C307	87-010-405-080		CAP, ELECT 10-50V<D>
C308	87-010-405-080		CAP, ELECT 10-50V<D>
C401	87-010-403-080		CAP, ELECT 3.3-50V
C402	87-010-403-040		CAP,E 3.3-50 SME
C501	87-010-555-040		CAP,E 100-10 GAS
C501	87-016-459-040		CAP,E 470-10 SMG<D>
C502	87-010-197-020		C-CAP,S 0.01-25 B
C503	87-010-263-040		CAP,E 100-10<D>
C503	87-010-555-040		CAP,E 100-10 GAS
C504	87-010-196-020		C-CAP,S 0.1-25 F
C505	87-010-196-020		C-CAP,S 0.1-25 F
C506	87-010-196-020		C-CAP,S 0.1-25 F
C507	87-010-196-020		C-CAP,S 0.1-25 F
C508	87-010-221-040		CAP,E 470-10 SME
C508	87-016-459-040		CAP,E 470-10 SMG<D>
C509	87-010-196-020		C-CAP,S 0.1-25 F
C510	87-010-196-020		C-CAP,S 0.1-25 F
C511	87-010-221-040		CAP,E 470-10 SME
C512	87-010-197-020		C-CAP,S 0.01-25 B
C601	87-010-197-020		C-CAP,S 0.01-25 B
C602	87-016-251-040		CAP,E 220-16 SMG<D>
C602	87-010-385-010		CAP,E 220-25
C603	87-010-196-020		C-CAP,S 0.1-25 F
C701	87-010-322-020		C-CAP,S 100P-50 CH<D>
C702	87-010-318-020		C-CAP,S 47P-50 CH<D>

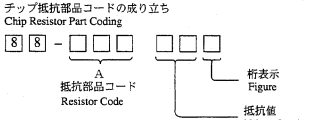
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C703	87-010-318-020		C-CAP,S 47P-50 CH<D>
C705	87-010-178-020		C-CAP,S 1000P-50 B<D>
C705	87-010-322-020		C-CAP,S 100P-50 CH
C706	87-018-209-080		CAP, CER 0.1-50V<D>
C801	87-010-263-040		CAP,E 100-10
C802	87-010-197-020		C-CAP,S 0.01-25 B
C803	87-010-318-020		C-CAP,S 47P-50 CH
C804	87-010-318-020		C-CAP,S 47P-50 CH
C807	87-010-318-020		C-CAP,S 47P-50 CH
C808	87-010-318-020		C-CAP,S 47P-50 CH
C809	87-010-318-020		C-CAP,S 47P-50 CH
C810	87-010-318-020		C-CAP,S 47P-50 CH
C901	87-010-260-080		CAP, ELECT 47-25V<D>
C901	87-010-260-040		CAP,E 47-25 SMK<D>
C902	87-010-196-020		C-CAP,S 0.1-25 F<D>
C902	87-010-196-080		CHIP CAPACITOR,0.1-25<D>
CN2	86-ZG1-609-010		CONN ASSY,6P
CON1	87-A60-424-010		CONN,16P V TOC-B
CON2	87-009-034-010		CONN,6P PH V
CON3	87-A60-133-010		CONN,8P V FE
CON5	87-A60-154-010		CONN,6P H FE
CON6	87-099-033-010		16P 5216 H<D>
CON6	87-A60-160-010		CONN,12P H FE
CON301	87-009-346-010		CONN,3P PH H<D>
CON302	87-009-350-010		CONN,7P PH H<D>
FB9	87-A50-192-080		C-COIL,S BLM21P300S
FB50	87-A50-192-080		C-COIL,S BLM21P300S
FB75	87-008-372-080		FILTER, EMI BL OIRNI
FB84	87-008-372-080		FILTER, EMI BL OIRNI
FB90	87-003-223-010		FERRITE BEAD BLO2RN2
FB94	87-003-223-010		FERRITE BEAD BLO2RN2
FB101	83-XM1-617-080		C-COIL,BK2125HM601
FB301	87-008-372-080		FILTER, EMI BL OIRNI<D>
FB401	87-008-372-080		FILTER, EMI BL OIRNI<D>
FC1	86-ZG1-605-010		CABLE,FFC 16P

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
FC2	86-ZG1-667-010		F-CABLE,8P 1.25 175MM BLACK
L31	87-003-102-080		COIL, 10UH
L101	87-003-102-080		COIL, 10UH
L201	87-003-102-080		COIL, 10UH<D>
LED501	87-A40-123-010		LED,SLZ-8128A-01-B<D>
M601	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
R101	87-022-363-020		C-RES,S 68K-1/10W F
R102	87-022-363-020		C-RES,S 68K-1/10W F
R103	87-022-363-020		C-RES,S 68K-1/10W F
R104	87-022-363-020		C-RES,S 68K-1/10W F
R105	87-022-365-020		C-RES,S 100K-1/10W F
R106	87-022-365-020		C-RES,S 100K-1/10W F
R301	87-025-337-080		RESISTOR, 1/4W 47<D>
R420	87-029-060-080		RES,FUSE 33-1/4 W
S601	87-036-109-010		PUSH SWITCH
S602	87-036-109-010		PUSH SWITCH
S603	87-036-109-010		PUSH SWITCH
X201	87-A70-046-010		VIB,XTAL 16.934MHZ
X801	87-A70-075-080		VIB,CER 4.19MHZ CRHF
LED C.B			
LED701	87-017-733-080		LED,SEL1250SM
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-733-080		LED,SEL1250SM
T-T C.B			
C411	87-018-214-080		CAP TC U 0.1-50F
CON8	87-A60-156-010		CONN,8P H FE
LED411	87-070-288-010		LED,GL380
M401	87-A90-036-010		MOT ASSY,RF-300CA-11
PS401	87-A90-156-010		SNSR,SG-240
Q411	87-A30-031-010		P-TR,PT380F
S401	87-036-109-010		PUSH SWITCH

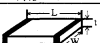
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

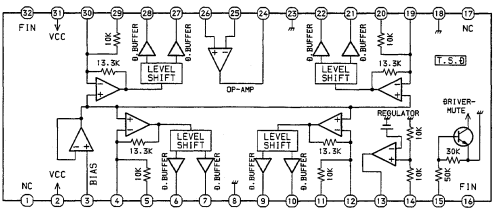
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the common section.

- IC DESCRIPTION ..... See page 17
- MECHANICAL EXPLODED VIEW ..... See page 23
- MECHANICAL PARTS LIST ..... See page 24
- CD MECHANISM EXPLODED VIEW ..... See page 25
- CD MECHANISM PARTS LIST ..... See page 25

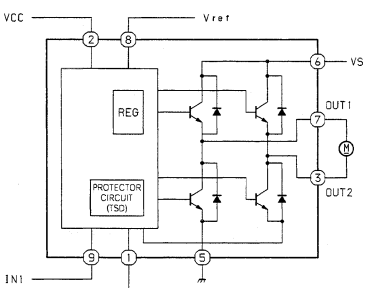
IC BLOCK DIAGRAM

IC, BA6898S



T.S.D:Thermal shitt down circuit
B.BUFFER:Drive Butter

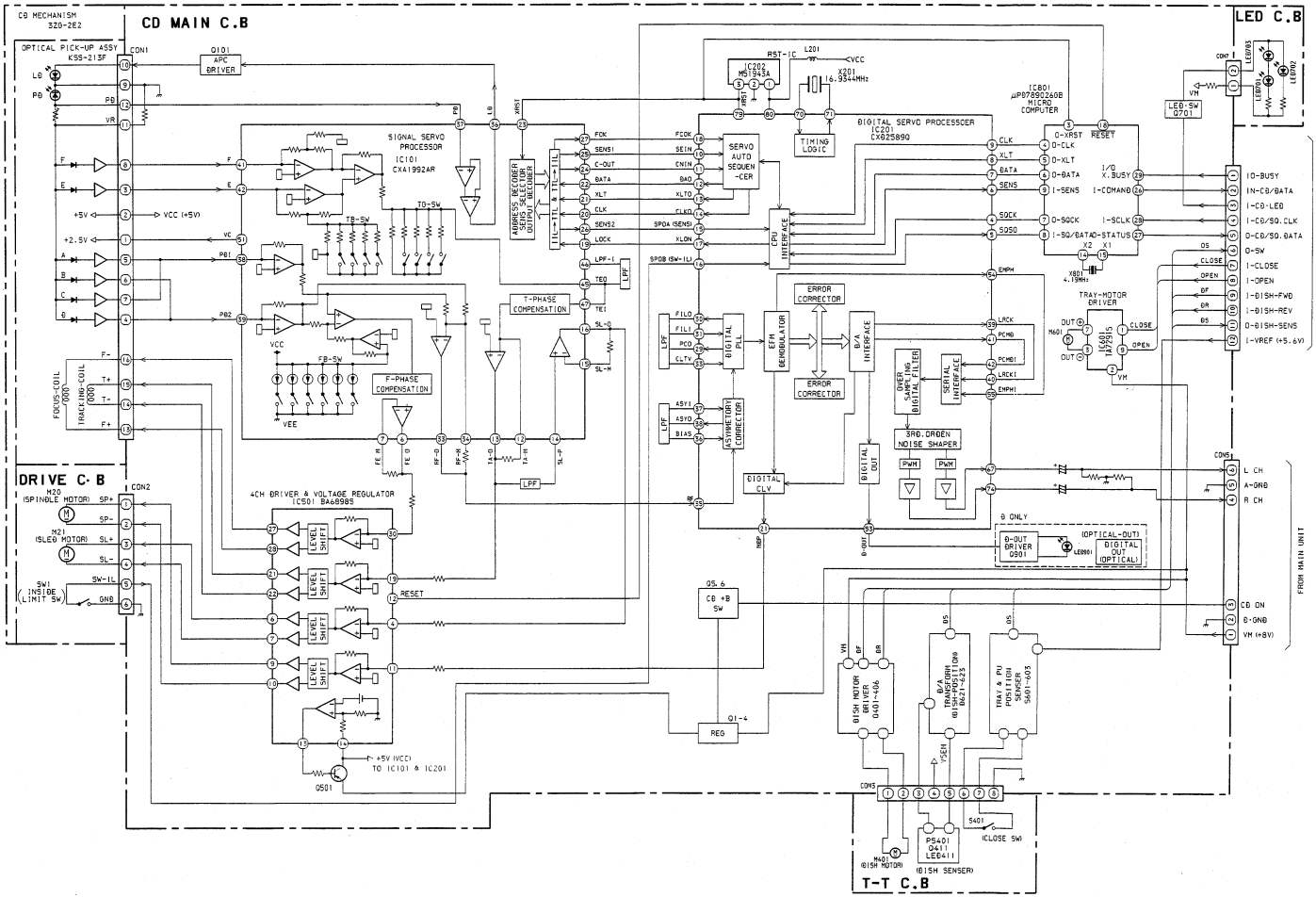
IC, TA7291S

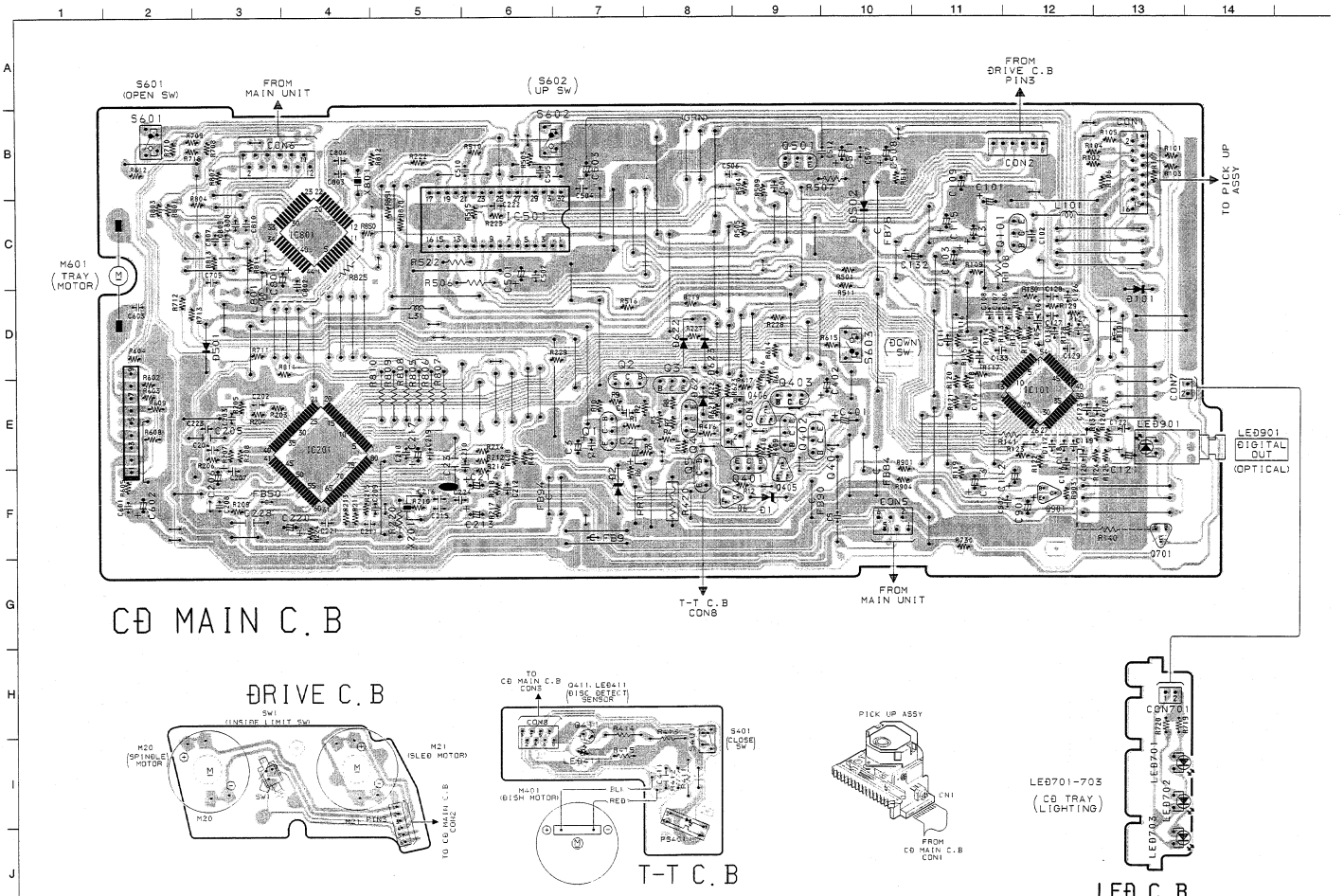


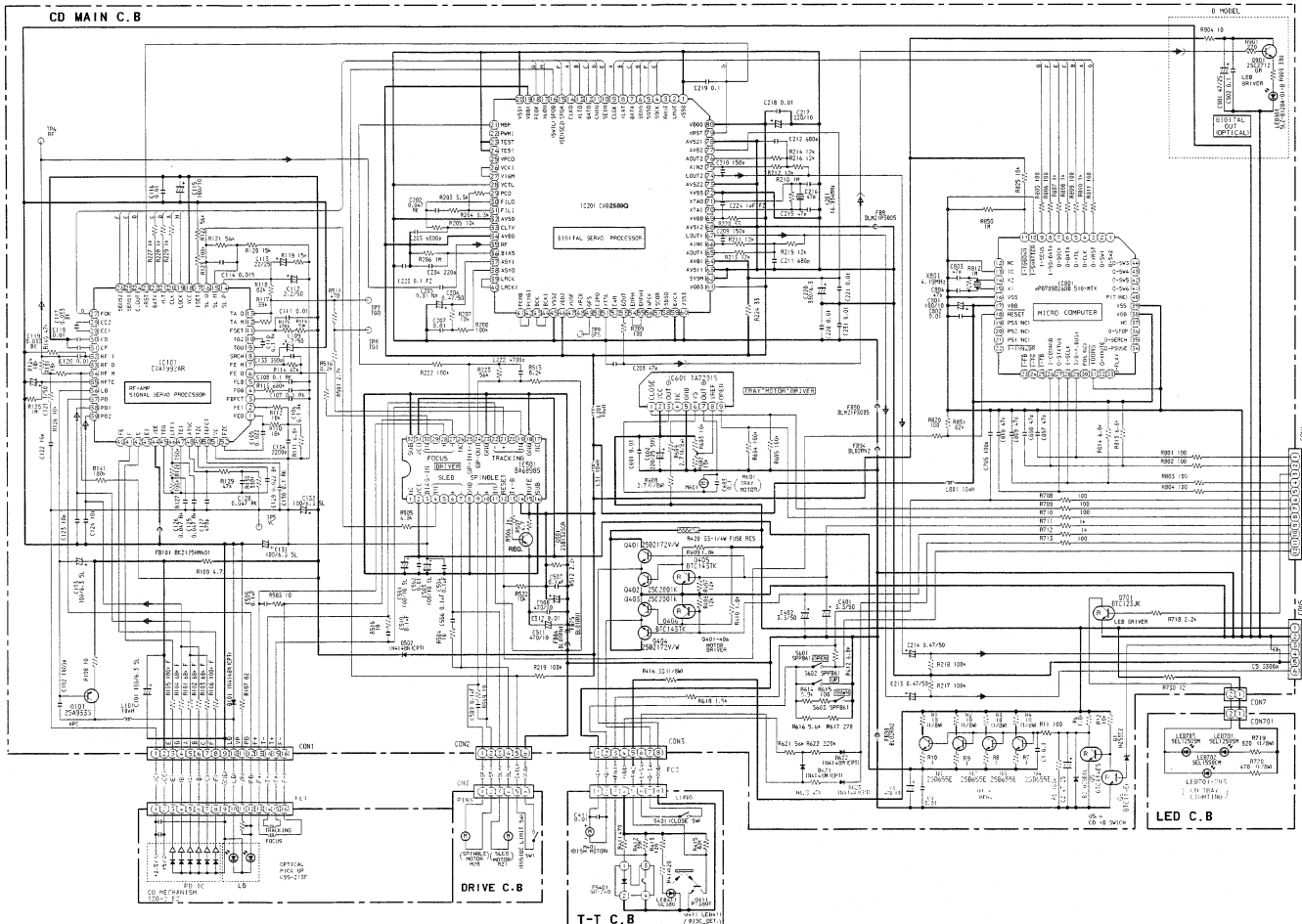
INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

BLOCK DIAGRAM




S601
(OPEN SW)
FROM
MAIN UNIT
(S602
UP SW)
FROM
DRIVE C.B
PIN3
TO PICK UP
ASSY
M601
(TRAY
MOTOR)
(DOWN
SW)
LED901
DIGITAL
OUT
(OPTICAL)
T-T C.B
CON8
FROM
MAIN UNIT
CD MAIN C.B
DRIVE C.B
SW1
(INSIDE LIMIT SW)
M20
(SPINDLE)
MOTOR
M21
(SLED MOTOR)
TO CD MAIN C.B
CON2
TO
CD MAIN C.B
CON3
Q411, LED411
(DISC DETECT
SENSOR)
S401
(CLOSE)
SW
M401
(BISH MOTOR)
T-T C.B
PICK UP ASSY
CN1
FROM
CD MAIN C.B
CON1
LED701-703
(CD TRAY
LIGHTING)
LED C.B


CD MAIN C.B
D MODEL
DIGITAL OUT (OPTICAL)
DIGITAL SERVO PROCESSOR
MICRO COMPUTER
RF-AMP SIGNAL SERVO PROCESSOR
FOCUS DRIVER
TRACKING DRIVER
SLED DRIVER
SPINDLE MOTOR DRIVER
TRAY MOTOR
TRAY SWITCH DRIVER
LED DRIVER
DRIVE C.B
T-T C.B
LED C.B
CD MECHANISM
OPTICAL PICK-UP KSM-213F
TO-BUSY
TO-CD-DATA
TO-CD-DCLK
TO-CD-SQ-DATA
TO-CD-SW
TO-CLOSE
TO-OPEN
TO-DISK.FWD
TO-DISK.REV
TO-DISK.SENS
TO-VREF
TO-FROM MAIN UNIT
VM (+12V)
CD ON
R CH
L CH

IC DESCRIPTION
IC, μPD789026GB

Pin No.	Pin Name	I/O	Description
1	O-SW1	O	Not used.
2	O-SW2	O	
3	O-XRST	O	XRST input to DSP. Low output during 100 m seconds after about 100 m seconds of resetting the system.
4	O-CLK	O	Clock input to DSP.
5	O-XTL	O	Latch input to DSP.
6	O-DATA	O	Data input to DSP.
7	O-SQCK	O	SUB-Q data read-out clock to DSP.
8	I-SQ-DATA	I	SUB-Q input from DSP.
9	I-SENS	I	SENS input from DSP.
10	$\overline{\text{I-SHATTER}}$	I	Connected to GND.
11	$\overline{\text{I-TGDOWN}}$	I	
12	NC	—	Not used.
13	IC	—	Connected to GND.
14	X2	O	Output terminal for external ceramic oscillator.
15	X1	I	Input terminal for external ceramic oscillator.
16	VSS	—	GND of microprocessor.
17	VDD	—	Power supply of microprocessor.
18	$\overline{\text{RESET}}$	I	Microprocessor reset input.
19	P53	—	Not used.
20	P52	—	
21	P51	—	
22	$\overline{\text{I-1992BR}}$	I	
23	$\overline{\text{I-FB}}$	I	
24	$\overline{\text{I-TG}}$	I	
25	$\overline{\text{I-TB}}$	I	
26	I-COMMAND	I	Command input from main microprocessor.
27	O-STATUS	O	Data output to main microprocessor.
28	I-SCLK	I	O-status read-out clock from main microprocessor/Clock for I-command.
29	X-BUSY	I/O	Flag for confirmation of busy and ready with the main microprocessor.
30	P06	—	Not used.
31	$\overline{\text{100MS}}$	—	Connected to GND.
32	O-AMUTE	O	Low output during playback only.
33	O-PLAY	O	High output during playback only
34	O-PAUSE	O	High output during pause only.
35	O-SERCH	O	High output during search only.
36	O-STOP	O	High output during stop only.
37	NC	—	Not used.
38	VDD	—	Power supply of microprocessor.
39	VSS	—	GND of microprocessor.
40	P17	—	Not used.

Pin No.	Pin Name	I/O	Description
41	O-SW6	O	Not used.
42	O-SW5	O	
43	O-SW4	O	
44	O-SW3	O	

MODEL NO. 6ZG-1S3

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-547-010		C-IC,CXA1992AR
	87-A20-546-010		C-IC,CXD2589Q
	87-A20-592-040		C-IC,M51943 AML
	87-001-792-080		IC,NJM2100M
	87-070-305-010		IC,BA6897S
	87-A20-856-010		IC,BA6898S<D>
	87-001-982-010		IC,TA7291S
	86-ZG1-649-010		C-IC,UPD789026GB-510-MTX<D>
TRANSISTOR			
	89-406-555-080		TR,2SD655 (0.5W)<D>
	87-026-245-080		TR,DTC114ESK<D>
	87-026-235-080		CHIP-TR,DTC114EK<D>
	87-026-463-080		TR,2SA933S (0.3W)
	89-324-123-080		C-TR,2SC2412K S
	87-026-227-080		CHIP-TR,DTA114EK
	89-421-722-380		TR,2SD2172V/W
	89-320-011-080		TR,2SC2001 (15W)
	87-026-239-080		TR,DTC114TK (0.2W)
	87-026-223-080		TR,DTC143TK<D>
	89-110-155-080		TR,2SA1015(0.4W)
	89-213-292-380		TR,2SB1329QR<D>
	87-026-608-080		C-TR,DTC 123 JK
	87-A30-075-080		C-TR,2SA1235K<D>
	89-327-125-080		CHIP TR,2SC2712GR<D>
DIODE			
	87-A40-348-080		ZENER,MTZJ3.3A<D>
	87-027-583-080		ZENER,HZ9B1L (200MA)<D>
	87-020-465-080		DIODE,1SS133 (110MA)
	87-A40-291-080		DIODE,1N4148 (CPT)<D>
CD MAIN C.B			
C1	87-010-196-080		CHIP CAPACITOR,0.1-25<D>
C2	87-010-260-080		CAP, ELECT 47-25V<D>
C3	87-010-221-040		CAP,E 470-10 SME<D>
C4	87-010-197-020		C-CAP,S 0.01-25 B<D>
C5	87-010-184-020		C-CAP,S 3300P-50 B<D>
C101	87-010-263-040		CAP,E 100-10
C101	87-010-550-040		CAP,E 100-6.3 GAS<D>
C102	87-010-178-020		C-CAP,S 1000P-50 B
C103	87-010-550-040		CAP,E 100-6.3 GAS
C104	87-010-182-020		C-CAP,S 2200P-50 B
C105	87-010-198-020		C-CAP,S 0.022-25 B
C106	87-016-081-080		C-CAP,S 0.1-16 RK
C107	87-016-081-080		C-CAP,S 0.1-16 RK
C108	87-016-081-080		C-CAP,S 0.1-16 RK
C109	87-010-497-040		CAP,E 4.7-35 GAS
C109	87-010-404-040		CAP,E 4.7-50 SME<D>
C110	87-016-081-080		C-CAP,S 0.1-16 RK
C111	87-010-197-020		C-CAP,S 0.01-25 B
C112	87-010-402-040		CAP,E 2.2-50 SME
C113	87-010-382-040		CAP,E 22-25 SME
C114	87-010-213-020		C-CAP,S 0.015-25 B
C115	87-010-263-040		CAP,E 100-10
C116	87-010-197-020		C-CAP,S 0.01-25 B
C117	87-016-369-020		C-CAP,S 0.033-25 B K<D>
C117	87-010-186-020		C-CAP,S 4700P-50 B
C118	87-010-197-020		C-CAP,S 0.01-25 B
C119	87-016-369-020		C-CAP,S 0.033-25 B K
C120	87-010-197-020		C-CAP,S 0.01-25 B
C121	87-010-494-040		CAP,E 1-50 GAS
C121	87-010-401-040		CAP,E 1-50 SME<D>
C122	87-010-154-020		C-CAP,S 10P-50 CH
C123	87-010-154-020		C-CAP,S 10P-50 CH
C124	87-010-154-020		C-CAP,S 10P-50 CH
C125	87-010-596-020		C-CAP,S 0.047-16 RK
C126	87-010-596-020		C-CAP,S 0.047-16 RK
C127	87-012-140-020		C-CAP,S 470P-50 CH
C128	87-010-596-020		C-CAP,S 0.047-16 RK
C129	87-010-198-020		C-CAP,S 0.022-25 B
C130	87-016-081-080		C-CAP,S 0.1-16 RK
C131	87-010-550-040		CAP,E 100-6.3 GAS
C132	87-010-550-040		CAP,E 100-6.3 GAS
C133	87-012-158-020		C-CAP,S 390P-50 J CH
C150	87-010-145-020		C-CAP,S 1P-50 C CH
C202	87-010-596-020		C-CAP,S 0.047-16 RK
C203	87-010-188-020		C-CAP,S 6800P-50 B
C204	87-012-156-020		C-CAP,S 220P-50 CH
C205	87-018-133-080		CAPACITOR,CER 4700P-16V
C205	87-018-134-080		CAPACITOR,TC-U 0.01-16<D>
C206	87-010-400-040		CAP,E 0.47-50
C207	87-010-197-020		C-CAP,S 0.01-25 B
C208	87-010-318-020		C-CAP,S 47P-50 CH<D>
C209	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C210	87-012-154-020		C-CAP,S 150P-50 J CH GRM
C211	87-010-176-020		C-CAP,S 680P-50 J SL
C212	87-010-176-020		C-CAP,S 680P-50 J SL
C213	87-010-400-040		CAP,E 0.47-50<D>
C213	87-010-382-040		CAP,E 22-25 SME
C214	87-010-400-040		CAP,E 0.47-50<D>
C214	87-010-382-040		CAP,E 22-25 SME
C215	87-010-318-020		C-CAP,S 47P-50 CH
C216	87-010-318-020		C-CAP,S 47P-50 CH
C217	87-010-101-040		CAP,E 220-16 SME<D>
C217	87-010-380-040		CAP,E 47-16 SME
C218	87-010-197-020		C-CAP,S 0.01-25 B
C219	87-010-196-020		C-CAP,S 0.1-25 F
C220	87-010-370-040		CAP,E 330-6.3 SME
C221	87-010-197-080		CAP, CHIP 0.01 DM
C222	87-010-186-020		C-CAP,S 4700P-50 B
C223	87-016-081-020		C-CAP,S 0.1-16 RK
C224	87-010-805-080		CAP, S 1-16<D>
C228	87-018-134-080		CAPACITOR,TC-U 0.01-16<D>
C230	87-018-209-080		CAP, CER 0.1-50V
C231	87-018-209-080		CAP, CER 0.1-50V
C231	87-018-134-080		CAPACITOR,TC-U 0.01-16<D>
C301	87-010-101-080		CAP, ELECT 220-16
C302	87-010-263-080		CAP, ELECT 100-10V
C305	87-010-318-020		C-CAP,S 47P-50 CH
C306	87-010-318-020		C-CAP,S 47P-50 CH
C307	87-010-405-080		CAP, ELECT 10-50V
C308	87-010-405-080		CAP, ELECT 10-50V
C401	87-010-403-080		CAP, ELECT 3.3-50V
C402	87-010-403-040		CAP,E 3.3-50 SME
C501	87-010-555-040		CAP,E 100-10 GAS<D>
C501	87-016-459-040		CAP,E 470-10 SMG
C502	87-010-197-020		C-CAP,S 0.01-25 B
C503	87-010-263-040		CAP,E 100-10
C503	87-010-555-040		CAP,E 100-10 GAS<D>
C504	87-010-196-020		C-CAP,S 0.1-25 F
C505	87-010-196-020		C-CAP,S 0.1-25 F
C506	87-010-196-020		C-CAP,S 0.1-25 F
C507	87-010-196-020		C-CAP,S 0.1-25 F
C508	87-010-221-040		CAP,E 470-10 SME<D>
C508	87-016-459-040		CAP,E 470-10 SMG
C509	87-010-196-020		C-CAP,S 0.1-25 F
C510	87-010-196-020		C-CAP,S 0.1-25 F
C511	87-010-221-040		CAP,E 470-10 SME<D>
C512	87-010-197-020		C-CAP,S 0.01-25 B<D>
C601	87-010-197-020		C-CAP,S 0.01-25 B
C602	87-016-251-040		CAP,E 220-16 SMG
C602	87-010-385-010		CAP,E 220-25<D>
C603	87-010-196-020		C-CAP,S 0.1-25 F
C701	87-010-322-020		C-CAP,S 100P-50 CH
C702	87-010-318-020		C-CAP,S 47P-50 CH

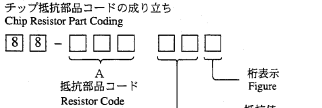
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C703	87-010-318-020		C-CAP,S 47P-50 CH
C705	87-010-178-020		C-CAP,S 1000P-50 B
C705	87-010-322-020		C-CAP,S 100P-50 CH<D>
C706	87-018-209-080		CAP, CER 0.1-50V
C801	87-010-263-040		CAP,S 100-10<D>
C802	87-010-197-020		C-CAP,S 0.01-25 B<D>
C803	87-010-318-020		C-CAP,S 47P-50 CH<D>
C804	87-010-318-020		C-CAP,S 47P-50 CH<D>
C807	87-010-318-020		C-CAP,S 47P-50 CH<D>
C808	87-010-318-020		C-CAP,S 47P-50 CH<D>
C809	87-010-318-020		C-CAP,S 47P-50 CH<D>
C810	87-010-318-020		C-CAP,S 47P-50 CH<D>
C901	87-010-260-080		CAP, ELECT 47-25V<D>
C901	87-010-260-040		CAP,E 47-25 SME<D>
C902	87-010-196-020		C-CAP,S 0.1-25 F<D>
C902	87-010-196-080		CHIP CAPACITOR,0.1-25<D>
CN2	86-ZG1-609-010		CONN ASSY,6P
CON1	87-A60-424-010		CONN,16P V TOC-B
CON2	87-009-034-010		CONN,6P PH V
CON3	87-A60-133-010		CONN,8P V FE
CON5	87-A60-154-010		CONN,6P H FE
CON6	87-099-033-010		16P 6216 H
CON6	87-A60-160-010		CONN,12P H FE<D>
CON301	87-009-346-010		CONN,3P PH H
CON302	87-009-350-010		CONN,7P PH H
FB9	87-A50-192-080		C-COIL,S BLM21P300S<D>
FB50	87-A50-192-080		C-COIL,S BLM21P300S<D>
FB75	87-008-372-080		FILTER, EMI BL OIRN1<D>
FB84	87-008-372-080		FILTER, EMI BL OIRN1<D>
FB90	87-003-223-010		FERRITE BEAD BLO2RN2<D>
FB94	87-003-223-010		FERRITE BEAD BLO2RN2<D>
FB101	83-XM1-617-080		C-COIL,BK2125HM601<D>
FB301	87-008-372-080		FILTER, EMI BL OIRN1
FB401	87-008-372-080		FILTER, EMI BL OIRN1
FC1	86-ZG1-605-010		CABLE,FFC 16P

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
FC2	86-ZG1-667-010		F-CABLE,8P 1.25 175MM BLACK
L31	87-003-102-080		COIL, 10UH<D>
L101	87-003-102-080		COIL, 10UH
L201	87-003-102-080		COIL, 10UH
LED901	87-A40-123-010		LED,SLZ-8128A-01-B<D>
M601	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
R101	87-022-363-020		C-RES,S 68K-1/10W F
R102	87-022-363-020		C-RES,S 68K-1/10W F
R103	87-022-363-020		C-RES,S 68K-1/10W F
R104	87-022-363-020		C-RES,S 68K-1/10W F
R105	87-022-365-020		C-RES,S 100K-1/10W F
R106	87-022-365-020		C-RES,S 100K-1/10W F
R301	87-025-337-080		RSESISTOR, 1/4W 47
R420	87-029-060-080		RES,FUSE 33-1/4 W<D>
S601	87-036-109-010		PUSH SWITCH
S602	87-036-109-010		PUSH SWITCH
S603	87-036-109-010		PUSH SWITCH
X201	87-A70-046-010		VIB,XTAL 16.934MHZ
X801	87-A70-075-080		VIB,CER 4.19MHZ CRHF<D>
LED C.B			
LED701	87-017-733-080		LED,SEL1250SM
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-733-080		LED,SEL1250SM
T-T C.B			
C411	87-018-214-080		CAP TC U 0.1-50F
CON8	87-A60-156-010		CONN,8P H FE
LED411	87-070-288-010		LED,GL380
M401	87-A90-036-010		MOT ASSY,RF-300CA-11
PS401	87-A90-156-010		SNSR,SG-240
Q411	87-A30-031-010		P-TR,PT380F
S401	87-036-109-010		PUSH SWITCH

- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



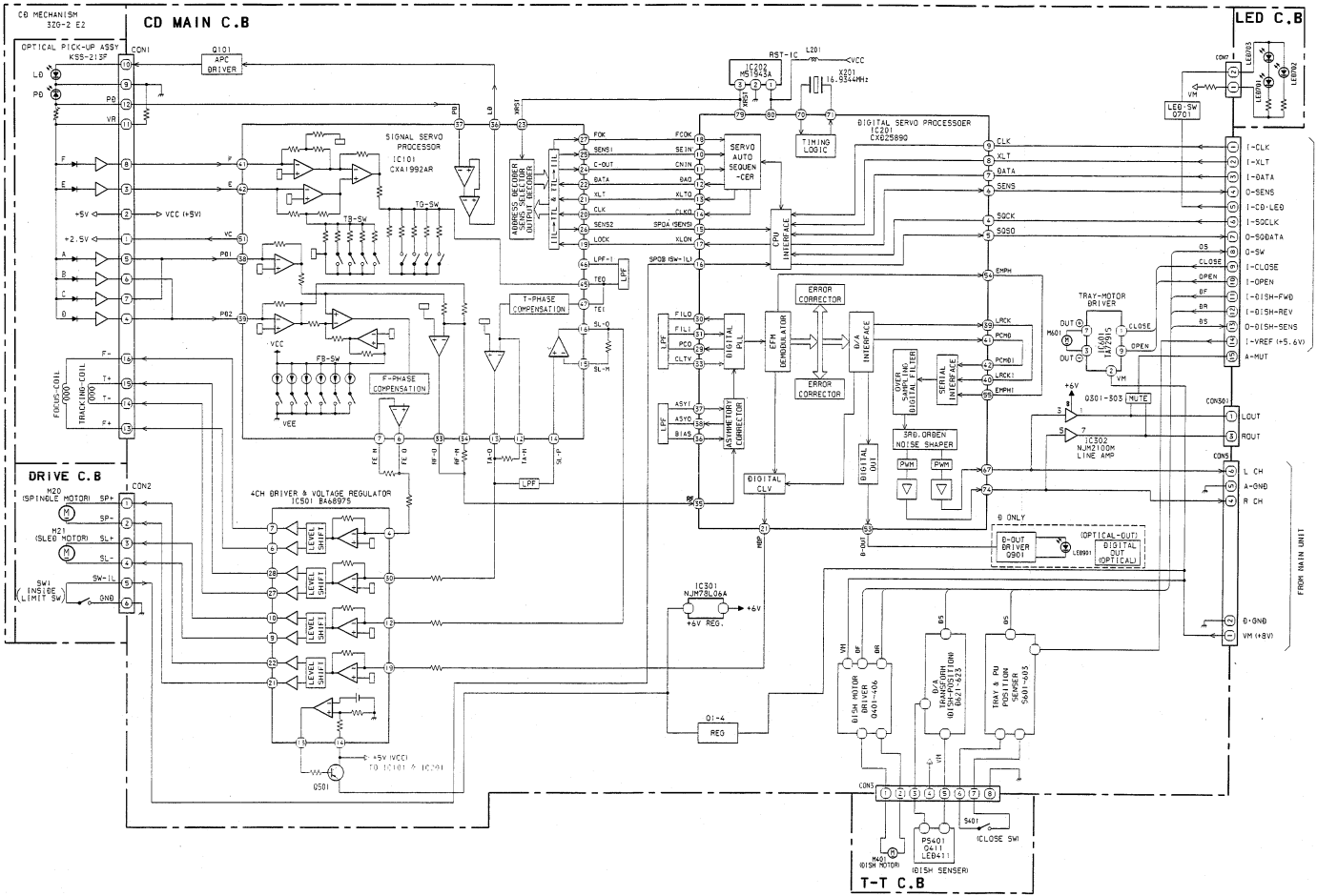
チップ抵抗
Chip resistor

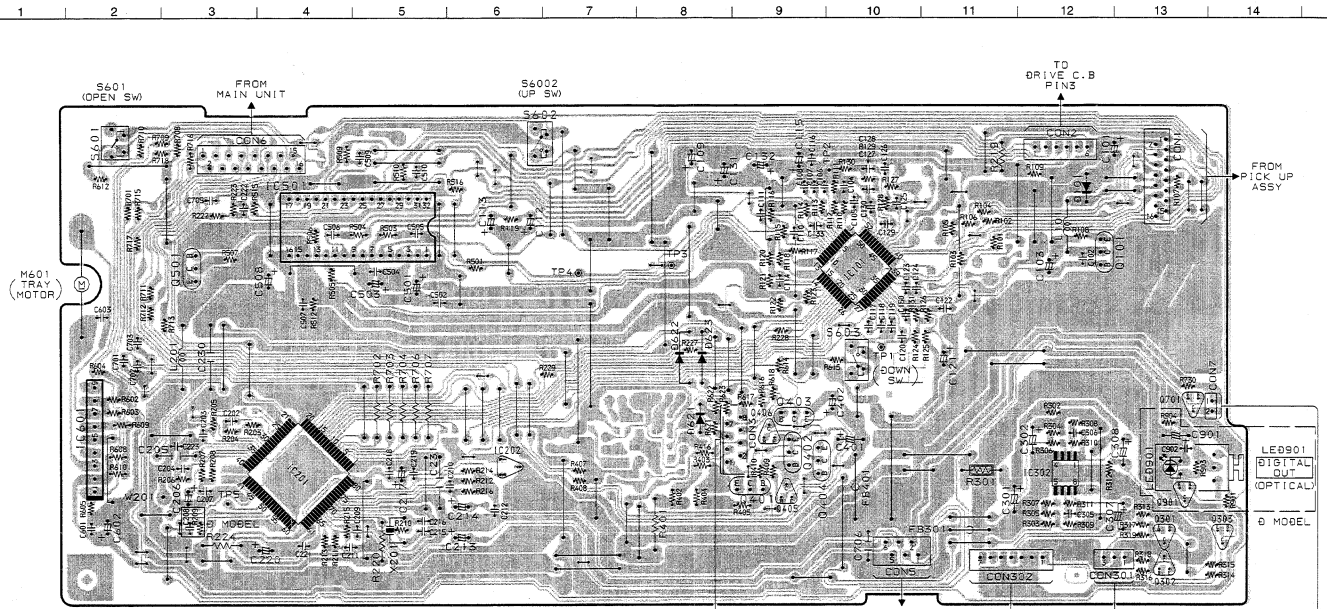
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Diamensions (mm) 外形 / Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

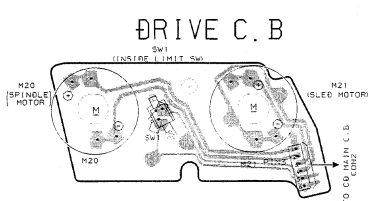
Refer to the following pages for the common section.

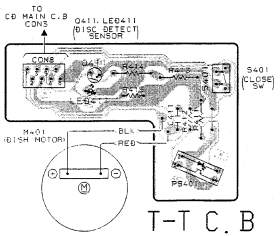
- IC DESCRIPTION ..... See page 17
- IC BLOCK DIAGRAM ..... See page 21
- MECHANICAL EXPLODED VIEW ..... See page 23
- MECHANICAL PARTS LIST ..... See page 24
- CD MECHANISM EXPLODED VIEW ..... See page 25
- CD MECHANISM PARTS LIST ..... See page 25

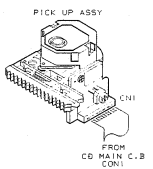
BLOCK DIAGRAM

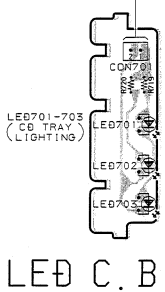


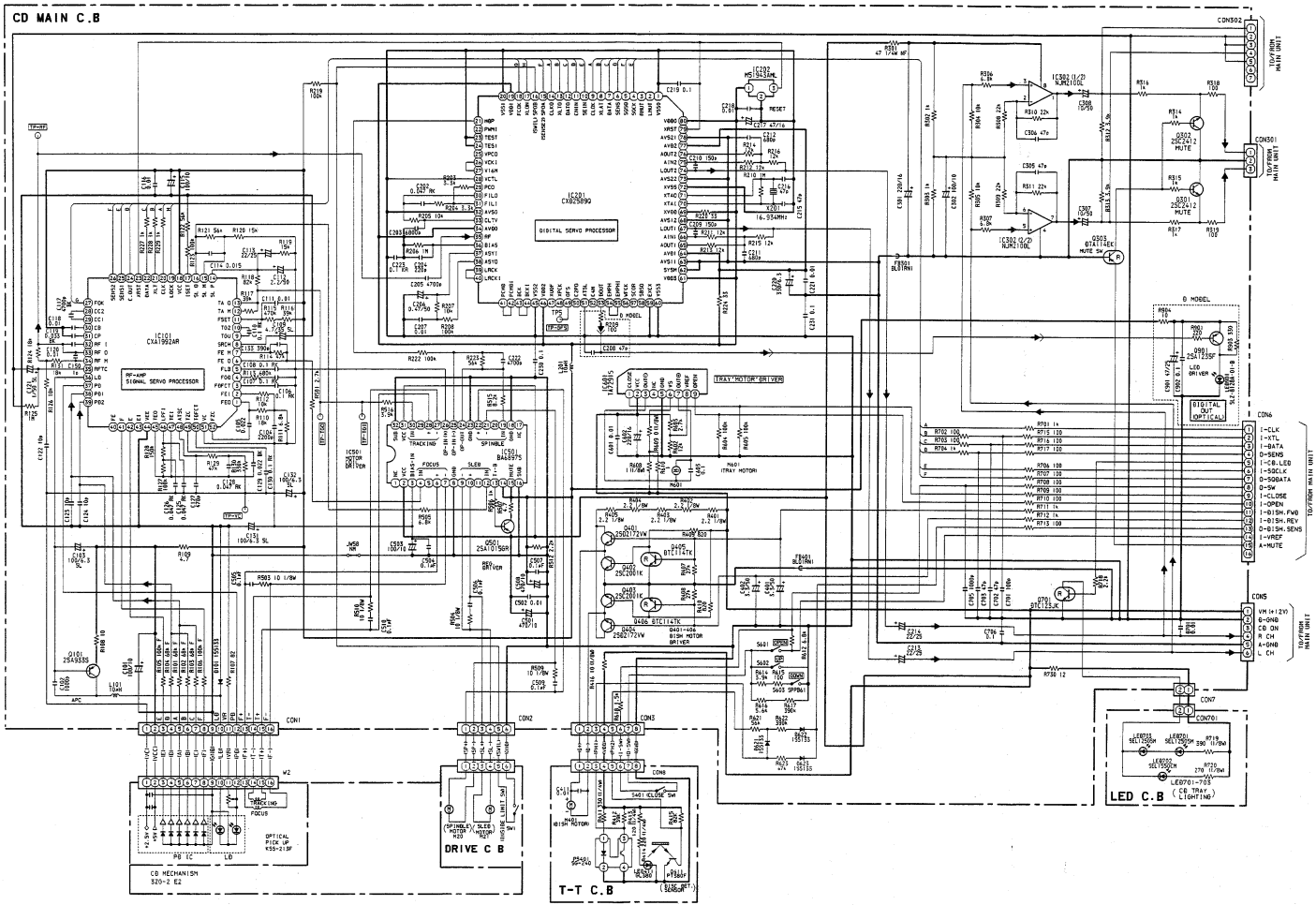

S601
(OPEN SW)
FROM
MAIN UNIT
S6002
(UP SW)
TO
ÐRIVE C.B
PIN3
FROM
PICK UP
ASSY
M601
(TRAY
MOTOR)
LED901
ÐIGITAL
OUT
(OPTICAL)
Ð MODEL
T-T C.B
CON8
FROM
MAIN UNIT
FROM
MAIN UNIT
FROM
MAIN UNIT
CÐ MAIN C.B


ÐRIVE C.B
SW1
(INSIDE LIMIT SW)
M20
(SPINDLE
MOTOR)
M21
(SLED MOTOR)
TO CÐ MAIN C.B
CON2


TO
CÐ MAIN C.B
CON5
Q411, LED411
(DISC DETECT
SENSOR)
CON8
S401
(CLOSE
SW)
M401
(DISH MOTOR)
BLK
RED
T-T C.B


PICK UP ASSY
CN1
FROM
CÐ MAIN C.B
CON1


CON701
LED701-703
(CÐ TRAY
LIGHTING)
LED702
LED703
LEÐ C.B


CD MAIN C.B
DIGITAL SERVO PROCESSOR
RF-AMP 5104AL SERVO PROCESSOR
TRACKING
FOCUS
SPINDLE
SLED
TRAY MOTOR DRIVER
ITRAY MOTOR
SPM MOTOR
SLED MOTOR
DRIVE C B
T-T C.B
LED C.B
CD MECHANISM 320-2 E2
OPTICAL PICK UP KSS-213F
B MODEL
DIGITAL OPTICAL
TO/FROM MAIN UNIT

CD TEST MODE

< How to Enter the Test Mode >

While pressing the SLEEP&OPEN/CLOSE key, insert the AC power cord to AC wall outlet.

< When the Machine Has Entered the Test Mode >

The system is initialized and the main power is turned on. During the test mode, the main power of the CD block is turned on always. The test mode starts with the [Sled mode].

< Types of Test Mode >

[Sled mode]

All displays of the FL tubes light. The optical pickup can be moved by pressing [⏮] or [⏭]key.

Pressing the [▷] key establishes the [Play mode].

Pressing the [⏮] key moves the sled to outer circumference.
Pressing the [⏭] key moves the sled to inner circumference.
Pressing OPEN/CLOSE key opens or closes the tray.

[Play mode]

Lighting of all displays of the FL tubes are turned off and returns to normal display. The focus search (numbers of search is unlimited) is performed. When focus comes to in-focus, the focus servo is locked in and the machines enters the normal play mode.
During [Play mode], GFS and sound skipping are not monitored.
When focus becomes out-of-focus, another attempt is made to search for focus.
The tracking servo and the sled servo can be turned on and off by pressing the [▷] key.

Pressing the [□] key establishes the [Sled mode].
The [II] display can be turned on and off by pressing the [▷] key .

While the [II] display is turned off:
CLV-A Tracking servo: on
Sled servo: on
While the [II] display is turned on:
CLV-A Tracking servo: off
Sled servo: off

Pressing the [⏮] key decreases the track number to -1.
Pressing the [⏭] key increases the track number to +1.
Pressing OPEN/CLOSE key opens or closes the tray.
The machine enters the [Sled mode].

< How to Exit the Test Mode >

Remove the AC power cord from power outlet, or turn off the system power.

USE MODEL LIST

XC-30M
DX-Z9450
CX-NMT960
CX-ZR880
CX-ZR990
CX-ZR770
CX-ZR774
CX-NF959
CX-NF958
CX-ZR550
CX-NA959
CX-ZVR99
CX-ZVR80
CX-ZVR88
CX-NAVF960
CX-NMT960
CX-ZR700